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ABSTRACT

This report first presents National Assessment of Educational Progress (NAEP) 1998 reading assessment results that are recalculated to include results from special needs students who were tested with accommodations. It also examines the impact on NAEP results of the varying exclusion rates of special needs students by participating states and other jurisdictions. Some findings were: (1) there were no statistically significant differences between the originally reported national average scale scores (with no accommodations) and the recalculated average scores (including data from assessments with accommodations); (2) there were no statistically significant differences in national average reading scale scores between the two sample types at any grade for either male or female students; (3) there were no statistically significant differences in the national data between the two sample types of any ethnic group in any grade; (4) allowing accommodations in the reading assessment resulted in decreased exclusion rates; (5) states varied in the percentage of students with accommodations tested (from 1% to 5%); and (6) there is a negative relationship between the change in inclusion rates and difference in average scale scores. Many tables and figures provide detailed analysis of the report's findings. Two appendices provide the legislative context for assessment of special-needs students and a data appendix. (DB)

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The Nation's Report Card NAEP

Including Special-Needs Students in the NAEP 1998 Reading Assessment

Part I
Comparison of Overall Results With and Without Accommodations

A Report on
1998 NAEP Research Activities

Statistical Analysis Report

U.S. Department of Education
Institute of Education Sciences
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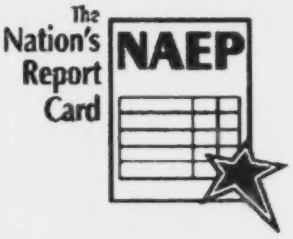

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Including Special-Needs Students in the NAEP 1998 Reading Assessment

Part I
Comparison of Overall Results With and Without Accommodations

A Report on 1998 NAEP Research Activities

Statistical Analysis Report

February 2003

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Executive Summary

Background

The National Assessment of Educational Progress (NAEP) is the nation's only ongoing survey of student achievement in core subject areas. Authorized by Congress, administered by the National Center for Education Statistics (NCES) in the U.S. Department of Education, and overseen by the National Assessment Governing Board (NAGB), NAEP regularly reports to the public on the educational progress of a representative sample of students in grades 4, 8, and 12.

Because NAEP's purpose is to report on what students know and can do, it is important that its student samples and assessment results represent the performance of all students. This includes the results for special-needs students—students with disabilities (SD) and limited English proficient (LEP) students. Although the intent of NAEP has consistently been to include special-needs students in its assessments to the fullest degree possible, the implementation of assessments has resulted in some exclusion of SD and LEP students. In order to participate in the NAEP assessments, some special-needs students require accommodations in the test administration. In 1996, NAEP began offering accommodations on a trial basis and conducting research to explore possible psychometric effects that the inclusion of accommodated special-needs students might have on assessment results in various subject areas.

The NAEP 1998 reading report card included national results for fourth-, eighth-, and twelfth-graders, as well as results for fourth- and eighth-graders in those states and other jurisdictions (i.e., U.S. territories and the District of Columbia) that volunteered to participate in state-level assessments.[1] In order to allow comparisons with results in 1992 and 1994, when accommodations were not offered, the report card did not incorporate the 1998 results for special-needs students who were tested with accommodations.

Purpose of This Report

There are two purposes to this report. The first is to present NAEP 1998 reading assessment results that are recalculated to include results from special-needs students who were tested with accommodations. The second is to examine the impact on NAEP results of the varying exclusion rates of special-needs students, by participating states and other jurisdictions. A follow-up report will explore the patterns of results for accommodated versus non-accommodated samples separately for students who are SD and LEP, using combined national and state data.

[1] Throughout the text in this report the terms states and jurisdictions are used to refer to both states and other jurisdictions.

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Comparison of Results When Accommodations Were Not Permitted and When Accommodations Were Permitted

Performance results for both the national and state assessments are reported in two ways. The first is in terms of average scale scores on the NAEP reading composite scale, which ranges from 0 to 500. The second is in terms of percentages of students at or above each of NAGB's three achievement levels (*Basic*, *Proficient*, and *Advanced*). The following is a summary of the findings addressed in this report:

- There were no statistically significant differences between the originally reported national average scale scores (where accommodations were not permitted) and the recalculated average scores (including data from the administrations where accommodations were permitted) at any of the three grades. Further, there were no statistically significant differences in the percentage of students at or above the *Basic* or *Proficient* achievement levels for the two samples at any of the grades assessed.
- In contrast to the unchanged results for the national data, at grade 4, average scale scores were higher in nine states for the original samples without accommodations permitted than for the recalculated average scale scores with accommodations permitted. At grade 8, there were no statistically significant differences in average scale scores between the two samples in any state or jurisdiction. At both grades 4 and 8, there were no statistically significant differences in the percentage of students at or above the *Basic* or *Proficient* achievement levels in any state or other jurisdiction.
- There were no statistically significant differences in national average reading scale scores between the two sample types at any grade for either male or female students.
- At the state level, however, average reading scores at grade 4 were higher for male students when accommodations were not permitted in three states, higher for female students when accommodations were not permitted in four states, and higher for both male and female students when accommodations were not permitted in one state. No statistically significant differences in the sample types by gender were found in grade 8.
- No statistically significant differences were found in the national data between the two sample types for any ethnic group in any grade.
- The state-level results showed statistically significant differences by race between the two sample types in five states at grade 4. In four states, Black students in the accommodated group had a lower average scale score than their peers in the samples where accommodations were not permitted. In three states, White students in the accommodated samples had a lower average scale score than their peers in the samples where accommodations were not permitted. In two of the five states noted above, both Black students and White students at grade 4 had lower average scale scores when accommodations were permitted. At grade 8, there were no statistically significant differences between the two sample types by ethnic group in any state or jurisdiction.

- In three states, fourth-graders who were eligible for the Free/Reduced-Price School Lunch Program had higher average reading scores when accommodations were not permitted than the students in the samples where accommodations were permitted. At grade 8, there were no statistically significant differences in the average scores of students in the two samples by eligibility for the Free/Reduced-Price School Lunch Program.

Relationship Between Exclusion Rates and Results at the State Level

Evolving policies and practices regarding the inclusion of special-needs students pose challenges to the state NAEP program as it strives to monitor accurately trends in academic achievement. As policies and practices have changed, the state NAEP program has seen corresponding changes in the proportion of special-needs students included in its samples. This report provides data on statistically significant differences in exclusion rates when accommodations were not permitted and when accommodations were permitted, and the relationship between those exclusion rates and state average scale scores.

- Allowing accommodations in the reading assessment resulted in decreased exclusion rates for a number of participating states and other jurisdictions. At grade 4, twelve of the 43 states or other jurisdictions that participated in the 1998 reading assessment had exclusion percentages of 10 percent or higher when accommodations were not permitted. In contrast, only five jurisdictions had exclusion percentages as high when accommodations were permitted. Differences in exclusion rates by accommodation were statistically significant in 10 of 43 jurisdictions at grade 4 and 10 of 40 jurisdictions at grade 8.
- While no state or other jurisdiction tested large percentages of students with accommodations, considerable variability was evident. At grade 4, two jurisdictions tested more than 5 percent of students with accommodations, while two jurisdictions tested 1 percent or less. At grade 8, there was generally less use of accommodations, although 7 of 40 participating jurisdictions tested 4 percent or more with accommodations.
- There is a negative relationship between the change in inclusion rates and difference in average scale scores. States or other jurisdictions that exhibited larger gains in inclusion (i.e., lower exclusion rates) tended to also exhibit larger reduction in their average scale scores when accommodations were permitted. The correlation at fourth grade was –0.72 and –0.52 at eighth grade.

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Conclusion

Offering accommodations in state NAEP to students who receive them in their regular classroom assessments will increase inclusion in some states and other jurisdictions, but the magnitude of the increase varies across jurisdictions. At grade 4, the increase in inclusion of special-needs students and the provision of accommodations was associated with lower average scale scores in nine states, but not in the nation. At grade 8, there was no pattern of statistically significant differences by accommodation status.

Readers are cautioned not to overgeneralize the results of this study for several reasons. First, within the reading subject area, the lack of difference between samples with accommodations permitted and those without accommodations permitted in the national data in 1998 did not continue in the 2000 fourth-grade national assessment, where a statistically significant difference did appear in favor of the sample without accommodations. Second, patterns may vary depending on the academic subject area. For example, in the present discussion of 1998 state reading assessment results, more states at grade 4 had lower average scale scores for their accommodated samples than at grade 8. However, for the mathematics assessment in 2000, the findings were different—more states at grade 8 had statistically significant lower average scale scores in accommodated samples than at grade 4. Finally, the fact that the reading assessment did not permit a Spanish translation suggests that the findings for LEP students may not generalize to other subjects, such as mathematics, where this accommodation may be offered.

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Chapter 1

Including Special-Needs Students in the NAEP 1998 Reading Assessment: Part I, Comparison of Overall Results With and Without Accommodations

Introduction

The National Assessment of Educational Progress (NAEP), also known as the Nation's Report Card, conducts the only national evaluation of what America's students know and can do. The 1998 assessments conducted by NAEP resulted in the publication of "report cards" on the academic performance of students in reading, writing, and civics. In addition, long-term trend assessments in reading, mathematics, and science at ages 9, 13, and 17 continue to be administered on a regular schedule, and have evaluated trends in student performance over the past 30 years. All the NAEP assessments are authorized and funded by the National Center for Education Statistics (NCES) of the U.S. Department of Education. Policy guidance for the NAEP program is provided by the National Assessment Governing Board (NAGB).

Because NAEP's purpose is to report on what students know and can do, it is important that the NAEP student samples and assessment results represent the educational attainment of all students. This includes the academic performance of special-needs students—students with disabilities (SD) and limited English proficient (LEP) students. According to the 22nd Annual Report to Congress (2000) on the Implementation of the Individuals with Disabilities Act (IDEA), there were 5,541,166 individuals aged 6–21 served under IDEA during the 1998–99 school year.[1] This total represented a 30.3 percent increase over the 1988–89 school year. This percentage growth in the number of SD individuals served by the program exceeded the growth in the United States resident population (9.7 percent) and the growth in school enrollment (14.1 percent) over the same ten-year period. There has also been growth in the percentage of the population classified as LEP. In 2000, 11.1 percent of the population of the United States was foreign-born, the highest percentage in the prior 60 years.[2] The percentage of non-native English speaking individuals likely rose along with the percentage of immigrants. In 1992, 10 percent of the adult population spoke no English at all before starting school.[3] These population changes have had an impact on NAEP and its attempt to report more inclusively on a representative sample of students in the United States.

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[1] U. S. Department of Education (2000). *To assure the free appropriate public education of all children with disabilities: Twenty-second annual report to Congress on the implementation of the Individuals with Disabilities Education Act.* Washington, DC: Author. Available: http://www.ed.gov/offices/OSERS/OSEP/Products/OSEP2000AnlRpt/

[2] U.S. Census Bureau, (2002). *United States Census 2000: Demographic Profiles: 100 percent and Sample Data* [On-line]. Available: http://www.census.gov/Press-Release/www/2002/dptables/2k00.xls

[3] Greenberg, E., Macias, R.F., Rhodes, D., & Chan, T. (2001). *English literacy and language minorities in the United States* (NCES Publication No. 2001–464). Washington, DC: National Center for Education Statistics.

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Purposes of This Report

This report continues the research series (see page 5) initiated by NAEP to examine the effects on NAEP results of including the data from special-needs students who are tested with appropriate accommodations. There are two main purposes addressed by this report. The first is to provide the recalculated results for the NAEP 1998 national report card in reading. These recalculated results include the data for accommodated special-needs students that were not included in the official report. Chapters 2 and 3 of this report include results of these analyses for the nation and participating states and other jurisdictions. The second purpose is to examine the impact of the varying exclusion rates of special-needs students by state. The results of the analysis of exclusion rates are presented in chapter 2.

A second report focused on the 1998 reading assessment will provide the results of additional analyses bearing on issues related to the credibility of NAEP scores and the comparability of assessment content constructs for accommodated and non-accommodated special-needs students. This second report will present the results of differential item functioning analyses using larger, aggregate samples, (i.e., combined samples across states), to examine whether NAEP items yield different patterns of results for accommodated versus non-accommodated SD and LEP students.

Student Exclusions from Assessment

Although the intent of NAEP has consistently been to include special-needs students in its assessments to the fullest degree possible, the implementation of the assessment has always resulted in some exclusion of SD and LEP students. NAEP assessed 31,398 public- and nonpublic-school students in grades 4, 8, and 12 for the national NAEP 1998 reading report card.[4] Of the students identified to be assessed in reading in 1998, 16 percent were identified as SD and/or LEP in fourth grade, 12 percent in eighth grade, and 7 percent in twelfth grade. Accommodations in testing were not offered to those special-needs students in the samples whose data were reported in the NAEP 1998 reading report card; thus, of the 16 percent identified as special-needs students in fourth grade, 9 percent were excluded from the assessment, in eighth grade, 6 percent were excluded, and in twelfth grade, 3 percent were excluded.

The NAEP program has for some time provided uniform guidelines for inclusion or exclusion of students in its assessments; however, because of the voluntary nature of the program, the implementation of the guidelines depends on decisions made by local school personnel in accordance with state and local practices for inclusion/exclusion. Decisions on student exclusion can vary from district to district, state to state, and over time. Variation in exclusion rates for assessment of special-needs students has been influenced by individual states' efforts to comply with federal legislative mandates in this area. Such variations can complicate the interpretations of national and state trends in performance results, as well as the comparisons of students' performance across jurisdictions. See appendix A of this report for a description of the legislative mandates.

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[4] Donahue, P.L., Voelkl, K.R., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states.* (NCES Publication No. 1999–500). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

The NAEP 1998 Reading Assessment: Inclusion/Exclusion Criteria and the Provision of Accommodations

In 1998, 43 jurisdictions (including states, U.S. territories, and the District of Columbia) voluntarily participated in the grade 4 assessment, and 40 jurisdictions participated in the grade 8 assessment. In a typical jurisdiction, representative samples of about 100 schools were selected and, within each school, random samples of approximately 25 students were administered the NAEP assessments in each subject. Thus, student sample sizes in a typical jurisdiction were about 2,500 for each subject. Smaller jurisdictions tended to have smaller school and student sample sizes.

Since the inception of the state NAEP program, staff members from participating schools have been permitted to exclude certain students with disabilities (more specifically, students with Individualized Education Plans (IEP) or students who are receiving services under Section 504 of the Rehabilitation Act of 1973 who cannot meaningfully participate in the assessment). Similarly, schools have been permitted to exclude students they identify as LEP (the criteria actually use the term "limited English proficient" or "LEP"). Exclusion decisions are to be made in accordance with explicit criteria provided by the NAEP program. The exclusion criteria used by NAEP in its 1992 and 1994 reading assessments were identical. The criteria were subsequently revised and used on a trial basis in 1996 for the mathematics assessment and then operationally in 1996 and 1998 for the science and reading assessments, respectively. The revised criteria applied to the data presented in this report for both the national and state assessments. The revised inclusion criteria were developed with advice from a number of federal government offices. The goals of the revision were to: 1) achieve greater inclusion for SD students; 2) better align NAEP inclusion rules for LEP students with those of state testing programs; 3) increase the salience of subject-related instructional practices in inclusion decisions; and, 4) encourage greater consistency in implementation across jurisdictions. Figure 1.1 summarizes the original criteria (used for the 1992 and 1994 national and state NAEP reading assessments) and the revised criteria (used for the 1998 national and state NAEP reading assessments). In all assessment years, schools were advised to include a student in the assessment if there was doubt about whether he or she could participate.

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Figure 1.1 – NAEP inclusion criteria 1992–98

	Students with disabilities (SD)	Students with limited English proficiency (LEP)
1992–94	**Can be excluded if:** • Mainstreamed in academic subjects less than 50 percent of the time; and/or • Judged by school personnel as being incapable of participating meaningfully in the assessment.	**Can be excluded if:** • Enrolled in a school where English is the primary language of instruction for less than two years; and, • Judged to be incapable of taking part in the assessment.
1998	**Should be included unless:** • The school's IEP team determined that the student could not participate, or, • The student's cognitive functioning was so severely disabled that she or he could not participate, or, • The student's IEP (or 504 plan) required that the student be tested with an accommodation or adaptation not offered by NAEP, and that the student could not demonstrate his or her knowledge without that accommodation.	**Should be included unless:** • Receiving academic instruction in English for less than three years, and, • Judged to be incapable of participating in the assessment in English.

For the 1998 NAEP reading assessment, national and state NAEP school random samples were divided into two equivalent halves. In one-half of the schools, the assessment was conducted using the 1998 inclusion criteria shown in figure 1.1 and accommodations were not permitted. In the other half-sample of schools, accommodations were permitted for SD and LEP students, if they normally received them in their district or state testing programs. Most accommodations that schools routinely provided for their own testing were permitted. Among the permitted accommodations were: 1) one-on-one testing, 2) small-group testing, 3) extended time, 4) oral reading of directions, 5) signing of directions, 6) use of magnifying equipment, and 7) use of an aide for transcribing responses. The NAEP program did not allow some of the accommodations that are permitted in certain states. In particular, some states allowed questions and, in some instances, reading passages to be read aloud to the students. These accommodations were viewed by NAEP as changing the nature of the construct being measured and, hence, were not permitted. Because NAEP considers the domain of its reading assessment as "reading in English," no attempt was made to provide an alternate-language version of the instrument and the use of bilingual dictionaries was not allowed. Students identified as LEP, however, were offered the accommodations listed above if they received these as part of their usual classroom testing.

Becoming a More Inclusive NAEP

NAEP has been working toward fuller inclusion of special-needs students in its assessments. To increase inclusion, NAEP is currently in a phased transition that started with the 1995 NAEP field test in reading. The first phase of the transition was the introduction of the revised criteria (shown in figure 1.1) to be used in making exclusion decisions about sampled students along

with offering accommodations experimentally in 1996. The second phase was the decision to conduct the national and state reading assessments in 1998 with split samples, one set of schools in which no accommodations were offered and another set in which accommodations were offered to students who normally received them in their state assessments. This was done because of concerns about the generalizability of the psychometric results across the subject areas assessed by NAEP, and in recognition of the absence of program experience with offering accommodations in the state NAEP program. Both samples used the revised exclusion criteria that were introduced in 1996. Splitting the sample allowed continued study of the technical issues associated with the analysis and summarization of results from accommodated testing, while at the same time maintaining the trend data from the previous (unaccommodated) assessments. The information in this report is based on results from both samples, those with and those without accommodations, and provides further study of inclusion rates and psychometric issues associated with the implementation of accommodations in NAEP. The sample design for this study is described in a later section of this chapter.

Previous NAEP Research on Assessment Including Special-Needs Students

Research initiated by NAEP has been focused first on the maintenance of the trend lines that is its core mission in the face of evolving accommodation policies and, second, on resolving issues regarding the validity and reliability of its assessments. The increasing use of accommodations by locally controlled state assessments in response to the 1997 IDEA legislation (see appendix A) coupled with an increase in exclusion of special-needs students from NAEP assessments observed over time have spurred the need to examine in detail the effect of providing accommodations before making them standard policy in the NAEP assessments. NCES has sponsored a series of studies on inclusion of special-needs students in large-scale assessments. This report is the third in that series. The initial report, published in 1997, provided an overview of the recent history leading to the increased focus on more inclusive assessments and presented a summary of relevant research studies.[5] That report also outlined research needs, thereby setting an agenda for future work. The second report, published in 1999, delineated the results of research activities on special-needs students based on the data in the NAEP 1996 assessments in mathematics and science.[6] This report presented in-depth analyses of the effects on inclusion rates of the NAEP 1996 policy changes that were intended to increase the participation of special-needs students in the assessments. It also contained an analysis of selected technical characteristics of the assessment results and a review of descriptive results of the background characteristics and educational experiences of special-needs students who participated in the NAEP 1996 national assessments in mathematics and science. The design of the 1996 study allowed for evaluations both of the effects of the newly changed student exclusion policy on exclusion rates (national) and the potential impact on the NAEP results of including data from special-needs students who had been tested with accommodations.

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[5] Olson, J.F. and Goldstein, A.A. (1997). *The inclusion of students with disabilities and limited English proficient students in large-scale assessments: A summary of recent progress.* (NCES Publication No. 97–482). Washington, DC: National Center for Education Statistics.

[6] Mazzeo, J., Carlson, J.E., Voelkl, K.E., & Lutkus, A.D. (1999). *Increasing the participation of special needs students in NAEP: A report on 1996 research activities.* (NCES Publication No. 2000–473). Washington, DC: National Center for Education Statistics.

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Beginning in 1998, assessments based on new frameworks (e.g., the 1998 NAEP writing and civics assessments) have used the revised criteria and have allowed students to be tested with the accommodations they would normally receive in state or district testing. However, a number of other NAEP subject area assessments (including the reading assessment which is the subject of this report) have trend lines that date back to the early 1990s. In such subjects, NAEP first needed to evaluate the impact of the criteria revisions and the policy changes on accommodations and adaptations on trend lines before permitting them operationally. It could not be assumed that the policy revisions on special-needs student exclusion and the addition of accommodated special-needs students into the NAEP samples would have no statistically significant effect on NAEP scale scores; therefore, during the transition period NAEP has been conducting a program of research designed to: 1) allow the measurement of trends under administrative procedures comparable to those of previous assessments; 2) permit study of the technical and psychometric issues associated with the analysis and summarization of scores obtained with accommodations; and 3) prepare for the transition to the use of the new inclusion criteria and the policy of allowing accommodations in these trend subjects.[7]

In 1996 and 1998, the NAEP program employed the previously mentioned split-sample designs that allowed for the maintenance of trends to the past while providing data for research studies and a transition to the future. In 1996, both the national NAEP mathematics and science assessments used split samples that included accommodated special-needs students, but did not use special-needs students' data in the results published in the report cards. In the 1996 NAEP mathematics and science assessments at the state level, accommodations were not offered even in the research mode, because the decision to provide accommodations in NAEP was made subsequent to state agreements regarding participation in NAEP.

Comparisons of results between the split samples allowed for the study of technical and psychometric issues. Results of these comparisons were reported in the 1996 NAEP mathematics and science reports, as well as in a special NAEP research and development report on increasing inclusion.[8]

A new background questionnaire was designed to collect information on SD and LEP students for the 1996 math and science assessments. It was also used for the 1998 writing and reading assessments. A staff member of the SD/LEP student's school, who knew about that student and his/her educational experiences and/or special needs, typically completed this background survey (referred to as the SD/LEP survey). This survey gave valuable information about the SD and LEP population. The SD/LEP survey provided NCES with data from which informed decisions could be made regarding the participation and accommodations provided for special-needs students in NAEP assessments. SD/LEP surveys are now routinely included in all of NAEP's major assessments.

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[7] Anderson, N.E., Jenkins, F.F., & Miller, K.E. (1996). *NAEP inclusion criteria and testing accommodations: Findings from the NAEP 1995 field test in mathematics*. Princeton, NJ: Educational Testing Service.

[8] Mazzeo, J., Carlson, J.E., Voelkl, K.E., & Lutkus, A.D. (1999). *Increasing the participation of special needs students in NAEP: A report on 1996 research activities*. (NCES Publication No. 2000–473). Washington, DC: National Center for Education Statistics.

Key Findings from the Previous NAEP Studies

Technical Characteristics

The major findings of the 1999 study on the technical characteristics of the 1996 NAEP mathematics and science assessment results included the following:

- Despite some evidence to suggest that results for some test items obtained using accommodations and adaptations do not exactly fit the standard statistical model as results obtained under standard administration conditions, the inclusion of data from nonstandard administrations had no discernible effect on aggregate NAEP scaling results. Differences in test-characteristic curves and test-information curves plotted with and without the inclusion of such data differed no more than would be expected, due to sampling variability.
- There were no significant differences in the overall means or in the means for subgroups between the sample with accommodations and the sample without accommodations at any of the three grades.
- The overall conclusion was that greater inclusion of special-needs students with testing accommodations would not significantly affect the NAEP scales or the percentages reported in NAEP's achievement-level categories. The conclusion was limited to the mathematics and science subject areas at the national level. It could not be assumed that the results would generalize to other subjects or to individual state results. The current report extends NAEP's research into the reading subject area.

Inclusion Rates for Students with Disabilities (SD) and Limited English Proficient (LEP) Students

- Comparison of the SD/LEP questionnaire results with actual participation rates from the 1996 mathematics assessment suggested that: 1) increases in the percentages of special-needs students participating in NAEP are not likely to result solely from revisions to inclusion policy criteria without the added provision of accommodations; and 2) further modest improvements in inclusion might still be possible if all allowable accommodations were more widely used.
- Analyses of inclusion rates by the length of time students were enrolled in schools where English was the primary language of instruction provided some evidence that, when implemented without the provision of accommodations and adaptations, the revised criteria (three years of academic instruction in English) actually resulted in less inclusion among LEP students than did the original criteria (in which the threshold for academic instruction in English was two years). This evidence was strongest at grade 4.
- Questionnaire results suggested that the procedural modifications made to NAEP had their primary impact on inclusion rates at grades 4 and 8 among students who would be tested in their native language if this accommodation were available. Participation rates for these students were higher when accommodations were available.

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NAEP Reporting Samples

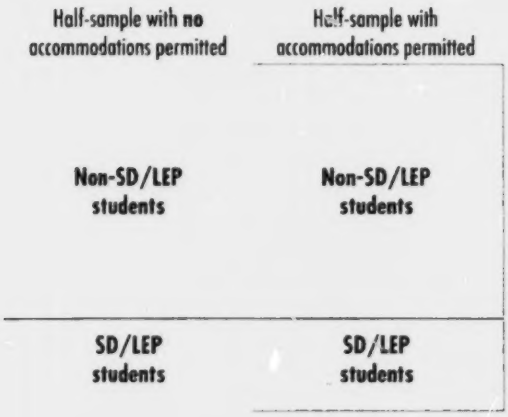
Two types of school samples are used in this report of 1998 national and state-by-state results. The first type of school sample used the previously described revised inclusion criteria and no assessment accommodations or adaptations. The other sample type also used the newer inclusion criteria but, in addition, made available a variety of assessment accommodations and adaptations. To ensure sufficient amounts of data for planned analyses, SD and LEP students were oversampled in schools participating in the NAEP national sample, and all students who received an accommodation at a given grade were administered the same NAEP assessment booklet. (The usual NAEP procedure of a spiraled set of test booklets encompassing a large set of test questions was modified for these samples.) The decision was made to gain greater experience with this modification to existing procedures in the context of the smaller scale and more controlled conditions like those introduced experimentally with the 1996 national assessment. Figure 1.2 provides a display of the sample design for the 1998 reading assessment.

While the samples in the national assessment included both public and nonpublic schools, the samples in the state assessments reported here included only public schools. While private schools were included in the state samples, most states did not gain sufficient participation from these schools to report their data.

In 1998, the national and state reading assessments used identical test instruments and procedures with one principal exception. National NAEP assessment sessions were conducted by a contractor (Westat), while state NAEP assessments were conducted by school staff provided by the participating jurisdictions and trained by the contractor. National and state NAEP samples were drawn separately; the national results were not the aggregation of the results from the participating state NAEP jurisdictions. National and state NAEP data were analyzed separately then equated so that results from both assessment programs could be reported on a common scale.[9]

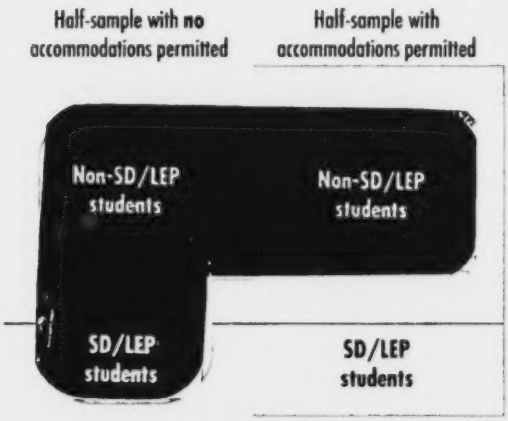
[9] For details on administration, sampling, and analysis of the 1998 NAEP assessments, see Allen, N.L., Donoghue, J.R., & Schoeps, T.L. (2001). *The NAEP 1998 technical report*. Washington, DC: National Center for Education Statistics. (NCES Publication No. 2001–509).

Figure 1.2 — The two sets of NAEP results based on a split-sample design



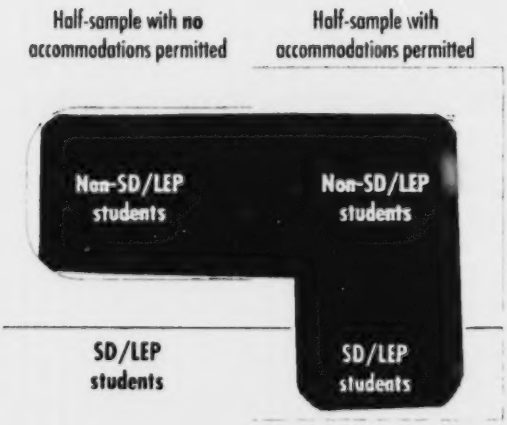
Split-sample design

The national and state samples were split. In half of the schools, accommodations were not permitted for students with disabilities (SD) and limited English proficient (LEP) students. In the other half of the schools, accommodations were permitted for SD and LEP students who routinely received them in their school assessments.



Accommodations-not-permitted results

The accommodations-not-permitted results include the performance of students from both half-samples who were not classified as SD or LEP and the performance of SD and LEP students from the half-sample in which no accommodations were permitted.



Accommodations-permitted results

The accommodations-permitted results also include the performance of students from both half-samples who were not classified as SD or LEP; however, the SD and LEP students whose performance is included in this set of results were from the half-sample in which accommodations were permitted. Since students who required testing accommodations could be assessed and represented in the overall results, it was anticipated that these results would include more special-needs students and reflect a more inclusive sample.

All SD and LEP students were included or excluded from participation in the 1998 assessment using the same "new" criteria. Table 1.1 displays the sizes of the samples. In each grade, the national samples reported in the 1998 NAEP Reading Report Card in the design above included A2+A3+B2 (i.e., n = 7,672 for grade 4). The samples used in this report to reflect the accommodated students included A2+A3+B3 (i.e., n = 7,812 for grade 4). These sample sizes are comparable to those in previous NAEP assessments.

As table 1.1 shows, the students who received accommodations made up about 1 to 2 percent of the total in the samples where accommodations were permitted in each grade.

Table 1.1 — National sample sizes for the NAEP reading assessment (public and nonpublic schools combined), grades 4, 8, and 12: 1998

Sample type	Accommodations not permitted	Accommodations permitted
Grade 4		
Non-SD/LEP	A2 3,608	A3 3,624
Assessed SD/LEP	B2	B3
Standard	440	413
Accommodated	0	167
Excluded SD/LEP	C2 545	C3 393
Total assessed	4,048	4,204
Grade 8		
Non-SD/LEP	A2 5,483	A3 4,826
Assessed SD/LEP	B2	B3
Standard	742	678
Accommodated	0	206
Excluded SD/LEP	C2 623	C3 368
Total assessed	6,225	5,710
Grade 12		
Non-SD/LEP	A2 6,037	A3 6,075
Assessed SD/LEP	B2	B3
Standard	563	532
Accommodated	0	116
Excluded SD/LEP	C2 448	C3 327
Total assessed	6,600	6,723

SD: Students with Disabilities. LEP: Limited English Proficient students.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Analysis Methods for the Present Study

Because of the split-sample design described previously, two separate estimates of 1998 inclusion rates and assessment results were available for the nation and for each state/jurisdiction. Data from the sample where accommodations were not permitted and a portion of the sample where accommodations were permitted (i.e., those students who were neither SD nor LEP) were combined to obtain a set of estimates under conditions where accommodations were not permitted. Similarly, data from the sample where accommodations were permitted and a portion of the sample where accommodations were not permitted (i.e., students who were neither SD nor LEP) were combined to obtain a set of estimates under conditions where accommodations were permitted. All analyses were conducted using sampling weights[10] and two distinct sets of weights were used. One set allowed for the production of estimates without accommodations and one allowed for the production of estimates with accommodations. Both sets of weights accounted for: 1) the school-sampling design; 2) school refusals; 3) the student-sampling design, specifically the oversampling of SD or LEP students; and 4) student absenteeism. In addition, both sets of weights were accompanied by a matching set of "replicate weights" that were used to produce jackknife standard errors[11] for all quantities estimated.

It is important to note that, in NAEP, excluded students and absent students are treated differently. Data from absentees (i.e., students who were scheduled to be assessed but were not) indirectly impact the calculation of NAEP results. Specifically, demographic data from absentees impact the weights used to analyze the data from the assessed students through student nonresponse adjustments. Data on excluded students have no impact on the calculation of results.[12] Excluded SD and LEP students are treated as outside the target population of inference. The results currently reported by NAEP technically generalize only the population of assessed and absent students. For this reason, differences in exclusion rates across jurisdictions or across time are particularly problematic for NAEP. In essence, to the degree the exclusion rates vary, so do the target populations of inference. Such variation complicates the interpretability of comparisons of results across time and across jurisdictions.

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[10] Calculated and provided by NAEP's sampling and data collection contractor, Westat.

[11] Details on the calculations of weights and jackknife procedures for obtaining standard errors are available in Allen, N.L., Donoghue, J.R., & Schoeps, T.L. (2001). *The NAEP 1998 technical report*. Washington, DC: National Center for Education Statistics.

[12] Data about exclusion rates are, however, routinely published in the procedural appendices of all NAEP reports.

The analyses presented in this report make use of four kinds of primary data: 1) exclusion percentages, 2) accommodation percentages, 3) average scores, and 4) percentages at or above the national achievement levels. Exclusion percentages are estimates of the percentage of public school students in a jurisdiction that have been excluded from the target population of inference. They provide an index of the degree of population coverage provided by the assessment results. For example, if a particular jurisdiction has an exclusion percentage of 10 percent, the results for that jurisdiction strictly generalize to only 90 percent of its public-school population. Exclusion percentages were calculated as follows:

$$\text{exclusion percentage} = \frac{\text{(sum of weights for excluded students)}}{\text{(sum of weights for assessed students + sum of weights for excluded students)}}$$

The numerator is an estimate of the number of public school students in the jurisdiction represented by the excluded students while the denominator is an estimate of the number of grade-eligible public-school students in the jurisdiction.[13]

Accommodation percentages are estimates of the percentage of a jurisdiction's population that would be assessed in NAEP for which accommodations are made available. Accommodation percentages were calculated as:

$$\text{accommodation percentage} = \frac{\text{(sum of weights for students assessed with accommodations)}}{\text{(sum of weights for assessed students + sum of weights for excluded students)}}$$

By definition, accommodation percentages are only relevant to the student populations that were represented by the weighted samples in which accommodations were offered.

Average scale scores and achievement-level percentages are obtained entirely from the assessed student data and their associated weights. Thus, they are an estimate of the average score (or achievement-level percentage) in the jurisdiction that would be obtained by students deemed eligible for the assessment (i.e., the assessed students and those scheduled to be assessed, but absent on the day of the testing). NAEP uses item-response theory (IRT) scaling methods and direct-estimation techniques to obtain these estimates, the description of which is beyond the scope of this report. The important point is that separate IRT scalings and direct-estimation procedures were used to obtain the results with and without accommodations.

[13] The student nonresponse adjustments to NAEP weights ensure that the portion of the population represented by the absent students is reflected in the sum of weights for the assessed students.

The analyses described in this report involve a number of comparisons between average scores and percentages. The comparisons discussed in this report are based on statistical tests that consider the magnitude of the observed differences, their estimated standard errors, and the degrees of freedom associated with the estimates. The statistical tests that compare 1998 results with and without accommodations were conducted so as to reflect the dependency inherent in these two sets of estimates. The statistical tests that compare 1998 results with previous years treated the two sets of estimates as arising from independent samples. All statistical tests were two-tailed and were evaluated for statistical significance in two ways: 1) at the 0.05 level of significance, and 2) controlling for multiple comparisons using the Benjamini-Hochberg False Discovery Rate procedure.[14] This procedure, known as FDR, controls the expected proportion of falsely rejected hypotheses. It is the statistical comparison procedure used to report differences involving multiple comparisons in NAEP report cards. FDR is considered more suitable for multiple comparisons in NAEP than other procedures. A detailed description of the FDR procedure and procedures for testing differences in dependent samples appear in the *NAEP 2000 Technical Report.*

Overview of the Remaining Report

Chapter 2 presents the overall results and student-exclusion rates from the 1998 reading report card juxtaposed with the recalculated data that included accommodated special-needs students. Chapter 3 provides subgroup data (gender, race/ethnicity, and eligibility for the federal Free/Reduced-Price School Lunch program) for each sample by jurisdiction.

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[14] Benjamini, Y. & Hochberg, Y. (1995). "Controlling the false discovery rate: A practical and powerful approach to multiple testing." *Journal of the Royal Statistical Society* [Series B], (1), 289–300.

Chapter 2

Comparisons of 1998 NAEP Reading Assessment Results When Accommodations Were Not Permitted and When Accommodations Were Permitted

Overview

This chapter presents an overview of the results for the samples of students reported in the 1998 reading report card (accommodations not permitted) and the same sample with accommodated, special-needs students included at both the national and state levels. Accommodated and non-accommodated students received the same reading test items, permitting the data to be combined. It should be understood that the results in the original report card did include special-needs students—those whose schools judged that they could participate *without* accommodations. For the national assessment, the performance of the sample where accommodations were permitted is reported, including both the accommodated and non-accommodated special-needs students in grades 4, 8, and 12. State-level results for these two groups of students were obtained for grades 4 and 8 only. State NAEP did not test students at grade 12.

Performance results for both the national and state assessments are reported here in two ways. Average scores on the NAEP reading composite scale, which ranges from 0 to 500, are provided for original samples (accommodations not permitted) and the samples with accommodations permitted, at each of the grade levels assessed. The percentages of students in each group at or above each of the three reading-achievement levels (*Basic*, *Proficient*, and *Advanced*) as well as the percentage of students scoring below *Basic* by grade level are also presented. In addition, analyses of the relationship between special-needs student-exclusion rates and average scale scores by state are included.

Average Scale Score Results for the Nation

Samples with Accommodations not Permitted v. Samples with Accommodations Permitted

Would the 1998 NAEP reading results for the nation have been significantly different if results from the sample of special-needs students with accommodations were included in the analysis? Based on analyses in which these students were included, no significant average scale score differences between the two samples were observed at any of the three grades. As seen in table 2.1, within each grade level the sample with accommodations permitted averaged one scale score point lower than the original sample of students, but these apparent differences were not statistically significant.

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Exclusion rates for SD/LEP students were about one-third lower in grades 4 and 8 where accommodations were permitted compared to where they were not permitted. At grade 12, exclusion rates were smaller than in the other grades and permitting accommodations changed the exclusion rate from 3 percent to 2 percent. Accommodation rates ranged from 3 percent of the reporting sample of students at grade 4 to 1 percent at grade 12.

Table 2.1 – National average reading scores, and exclusion and accommodation rates, when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998

	Average scale scores		Exclusion rates*		Accommodation rates*
	Accommodations not permitted	Accommodations permitted	Accommodations not permitted	Accommodations permitted	
Grade 4	217	216	9	6	3
Grade 8	264	263	6	4	2
Grade 12	291	290	3	2	1

* Combined rate for SD and LEP students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Average Scale Score Results for the States

Samples with Accommodations not Permitted v. Samples with Accommodations Permitted

In contrast to the relatively unchanged results in the national report card, the 1998 NAEP reading report cards for several of the individual states might have displayed slightly different results had students requiring test accommodations been included in their reporting samples. As can be seen in table 2.2, among students in grade 4, average scale scores for the original samples without accommodations were higher than average scale scores for samples with accommodations permitted in nine states (Delaware, Iowa, Louisiana, Maryland, Massachusetts, Minnesota, North Carolina, Oregon, and Wisconsin). In the remaining states and jurisdictions that were involved in the grade 4 assessment, no statistically significant scale score differences between the two samples were identified.

Table 2.2 — Average reading scores by state, when accommodations were not permitted and when accommodations were permitted, grade 4: 1998

The Nation's Report Card NAEP

	Accommodations not permitted		Accommodations permitted	
	Number of students	Average score	Number of students	Average score
Alabama	2,506	211	2,475	211
Arizona	2,432	207	2,423	206
Arkansas	2,580	209	2,573	209
California†	1,722	202	1,713	202
Colorado	2,528	222	2,540	220
Connecticut	2,484	232	2,531	230
Delaware	2,309	212	2,359	207[a]
Florida	2,463	207	2,532	206
Georgia	2,647	210	2,684	209
Hawaii	2,600	200	2,601	200
Iowa†	2,232	223	2,244	220[a]
Kansas†	1,845	222	1,856	221
Kentucky	2,442	218	2,456	218
Louisiana	2,587	204	2,658	200[A]
Maine	2,355	225	2,386	225
Maryland	2,241	215	2,308	212[a]
Massachusetts†	2,306	225	2,325	223[a]
Michigan	2,365	217	2,368	216
Minnesota†	2,271	222	2,292	219[a]
Mississippi	2,552	204	2,554	203
Missouri	2,482	216	2,514	216
Montana†	1,847	226	1,886	225
Nevada	2,597	208	2,613	206
New Hampshire†	1,805	226	1,805	226
New Mexico	2,284	206	2,333	205
New York†	2,221	216	2,256	215
North Carolina	2,514	217	2,552	213[a]
Oklahoma	2,576	220	2,553	219
Oregon	2,396	214	2,351	212[a]
Rhode Island	2,533	218	2,500	218
South Carolina	2,411	210	2,433	209
Tennessee	2,627	212	2,599	212
Texas	2,241	217	2,267	214
Utah	2,678	215	2,642	216
Virginia	2,602	218	2,625	217
Washington	2,378	217	2,340	218
West Virginia	2,518	216	2,531	216
Wisconsin†	2,071	224	2,126	222[a]
Wyoming	2,642	219	2,635	218
Other Jurisdictions				
District of Columbia	2,353	182	2,397	179
DDESS	2,647	220	2,628	219
DoDDS	2,609	223	2,623	221
Virgin Islands	1,469	178	1,468	174

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

A/a = Significantly different from the original sample. A= Significance level is adjusted for multiple comparisons across jurisdictions.

a= Pairwise significance test not adjusted for multiple comparisons.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table 2.3 displays the average scale scores for the states and participating jurisdictions for grade 8 for both samples. No significant differences in average scale scores were observed between the two samples in grade 8 in any of the states or other participating jurisdictions.

Table 2.3 — Average reading scores by state, when accommodations were not permitted and when accommodations were permitted, grade 8: 1998

	Accommodations not permitted		Accommodations permitted	
	Number of students	Average score	Number of students	Average score
Alabama	2,428	255	2,404	255
Arizona	2,325	261	2,410	260
Arkansas	2,412	256	2,423	256
California†	1,944	253	2,020	252
Colorado	2,542	264	2,556	264
Connecticut	2,489	272	2,516	270
Delaware	1,987	256	1,976	254
Florida	2,392	253	2,405	255
Georgia	2,499	257	2,516	257
Hawaii	2,461	250	2,503	249
Kansas†	1,857	268	1,864	268
Kentucky	2,282	262	2,291	262
Louisiana	2,479	252	2,532	252
Maine	2,363	273	2,392	271
Maryland†	2,087	262	2,117	261
Massachusetts	2,141	269	2,209	269
Minnesota†	1,926	267	1,936	265
Mississippi	2,274	251	2,294	251
Missouri	2,526	263	2,539	262
Montana†	1,877	270	1,872	271
Nevada	2,449	257	2,450	258
New Mexico	2,183	258	2,182	258
New York†	1,842	266	1,859	265
North Carolina	2,487	264	2,528	262
Oklahoma	2,182	265	2,172	265
Oregon	2,169	266	2,177	266
Rhode Island	2,393	262	2,343	264
South Carolina	2,429	255	2,437	255
Tennessee	2,159	259	2,136	258
Texas	2,318	262	2,349	261
Utah	2,510	265	2,520	263
Virginia	2,493	266	2,513	266
Washington	2,205	265	2,238	264
West Virginia	2,442	262	2,476	262
Wisconsin†	1,918	266	1,929	265
Wyoming	2,509	262	2,517	263
Other Jurisdictions				
District of Columbia	1,528	236	1,544	236
DDESS	610	269	611	268
DoDDS	2,138	269	2,182	269
Virgin Islands	643	233	643	231

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Exclusion Rates and Scaled Scores from Samples With and Without Accommodations

As noted in the introductory chapter, prior research with the national NAEP samples during the 1996 mathematics and science assessments suggested that the provision of accommodations would indeed result in greater inclusion. Table 2.4 presents the 1998 state NAEP exclusion rates (i.e., the estimated percentage of the target population excluded from NAEP) by state for the samples with accommodations and without accommodations, for grades 4 (43 jurisdictions) and 8 (40 jurisdictions), respectively. Exclusion rates for the national sample are also provided for reference. The national combined percentages include public and private schools, while the national public percentages are comparable to the average state percentages where only public schools were included. The percentages reflect exclusions among SD as well as among LEP students. As in previous assessments, considerable variability in the percentage excluded was evident across state NAEP jurisdictions, regardless of whether accommodations were permitted. This variability remains a challenge and concern for the program.

The impact of accommodations on exclusion rates can also be seen in table 2.4. Though evident at both grades, the impact is particularly visible at grade 4. For example, 12 of the fourth-grade jurisdictions had exclusion percentages of 10 percent or higher when accommodations were not permitted. Only 5 jurisdictions had exclusion percentages that high when accommodations were allowed and 3 of these were states where at least 10 percent of the students were identified as LEP (California, Nevada, and Texas).[1]

[1] As noted earlier, the assessment measured reading in English. Hence, no alternative language versions were offered.

Table 2.4 — Reading exclusion rates by state for special-needs students, when accommodations were not permitted and when accommodations were permitted, grades 4 and 8: 1998

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	Grade 4 Accommodations not permitted	Grade 4 Accommodations permitted	Grade 8 Accommodations not permitted	Grade 8 Accommodations permitted
National public and nonpublic	9	6	6	4
National public	10	7	6	4
Alabama	8	8	6	6
Arizona	10	10	7	5
Arkansas	5	5	7	5
California	15	14	8	4
Colorado	7	6	5	4
Connecticut	13	10	8	6
Delaware	7	1	6	2
Florida	9	6	5	5
Georgia	7	5	5	4
Hawaii	5	5	6	5
Iowa	8	5	*	*
Kansas	6	4	5	4
Kentucky	9	7	5	3
Louisiana	12	7	10	5
Maine	8	7	7	5
Maryland	10	6	7	3
Massachusetts	8	5	7	4
Michigan	7	6	*	*
Minnesota	4	3	4	1
Mississippi	4	4	7	6
Missouri	7	6	6	4
Montana	4	2	3	4
Nevada	12	11	8	6
New Hampshire	5	3	*	*
New Mexico	11	9	7	8
New York	9	7	10	8
North Carolina	10	7	9	6
Oklahoma	9	9	9	9
Oregon	7	6	4	4
Rhode Island	7	7	5	6
South Carolina	11	8	6	5
Tennessee	4	4	4	6
Texas	14	13	7	5
Utah	5	6	5	4
Virginia	8	6	7	5
Washington	5	5	4	4
West Virginia	9	8	8	7
Wisconsin	10	8	8	5
Wyoming	4	3	2	2
Other Jurisdictions				
District of Columbia	11	9	9	5
DDESS	5	4	5	2
DoDDS	4	3	4	1
Virgin Islands	6	5	7	7

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

*State did not participate at grade 8.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figures 2.1 and 2.2 (for grades 4 and 8, respectively), present bar charts of the differences in exclusion percentages without and with accommodations in each of the participating jurisdictions in 1998 (significant differences among state results presented in the figures are indicated in the corresponding data tables in appendix B). These differences can be understood as estimates of the change in inclusion resulting from allowing accommodations. Note that the difference data presented in figures 2.1 and 2.2 were calculated using unrounded data, and the percentages in table 2.4 used rounded data. The charts are sorted (left to right) by the size of the difference. The higher the bars, the greater the percentage change toward more inclusion. For both grades, allowing accommodations in the reading assessment resulted in increased inclusion (or, equivalently, decreased exclusion) for a number of the participating jurisdictions. When tested one-at-a-time, the differences in exclusion rates were statistically significant in 10 of the 43 fourth-grade jurisdictions and 10 of the 40 eighth-grade jurisdictions. When tested while controlling for multiple comparisons using the Benjamini-Hochberg False Discovery Rate procedure, 4 of the fourth-grade differences and 5 of the eighth-grade differences remained statistically significant. In all cases where statistical significance was found, exclusion rates were lower in the samples in which accommodations were permitted. Seven of the 43 fourth-grade state NAEP participants, and 7 of the 40 eighth-grade state participants included at least 3 percent more of the target population in the sample where accommodations were permitted. In 37 of the 43 fourth-grade jurisdictions, and 31 of the 40 eighth-grade participants, the percentage of students included appeared at least marginally higher in the samples where accommodations were permitted. In 5 states at fourth grade and 9 states at eighth grade, the exclusion rate when accommodations were offered was marginally higher than the exclusion rate when accommodations were not offered. The larger of these counterintuitive differences was 1 percent at fourth grade almost 2 percent at eighth grade.

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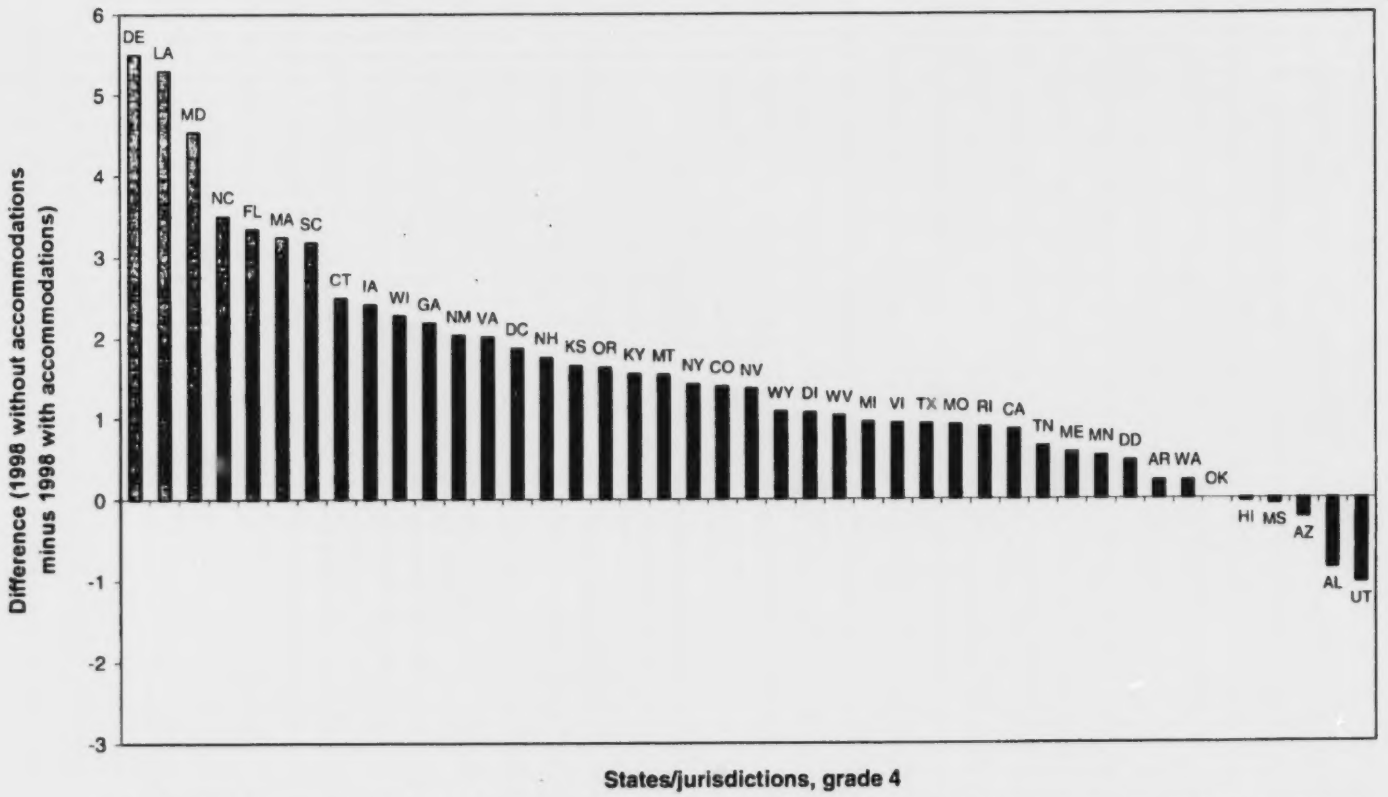
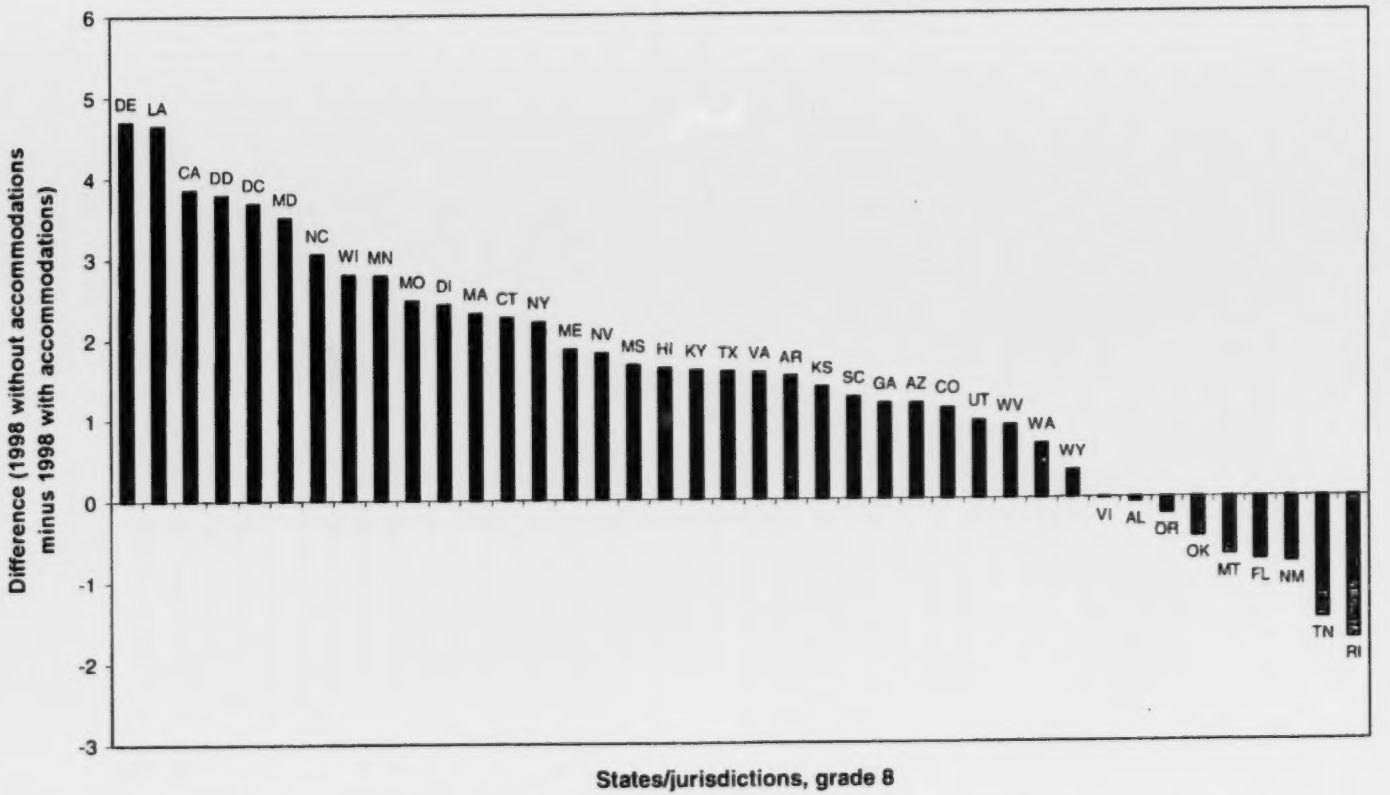
Figure 2.1 — Differences in state reading percentages of excluded students, with and without accommodations, grade 4: 1998


Difference (1998 without accommodations minus 1998 with accommodations)
6
5
4
3
2
1
0
-1
-2
-3
DE LA MD NC FL MA SC CT IA WI GA NM VA DC NH KS OR KY MT NY CO NV WY DI WV MI VI TX MO RI CA TN ME MN DD AR WA OK HI MS AZ AL UT
States/jurisdictions, grade 4

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure 2.2 — Differences in state reading percentages of excluded students, with and without accommodations, grade 8: 1998


Difference (1998 without accommodations minus 1998 with accommodations)
6
5
4
3
2
1
0
-1
-2
-3
DE LA CA DD DC MD NC WI MN MO DI MA CT NY ME NV MS HI KY TX VA AR KS SC GA AZ CO UT WV WA WY VI AL OR OK MT FL NM TN RI
States/jurisdictions, grade 8

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Another notable aspect of figures 2.1 and 2.2 is the variability of the differences across jurisdictions. At both grades, a few jurisdictions showed substantial increases in inclusion compared to the other jurisdictions. One conjecture is that these jurisdictions are moving aggressively in allowing accommodations in their own state testing programs. The policy in NAEP of relying on what is typically done in state and district testing programs results in NAEP exclusion percentages that reflect the differences in assessment practices across jurisdictions.

Figures 2.3 through 2.6 show bar charts of the differences in the exclusion percentages with and without accommodations, separately for SD and LEP students. Figures 2.3 and 2.4 present grade 4 results while figures 2.5 and 2.6 present the grade 8 results. At both grades, the pattern of results for SD students (figures 2.3 and 2.5) looks quite similar to the overall exclusion results, with the large majority of jurisdictions appearing to show an increase in inclusion when accommodations were permitted. At grade 4, statistically significant differences were found for 14 jurisdictions (11 jurisdictions after controlling for multiple comparisons), all indicating greater inclusion in the samples where accommodations were permitted. At grade 8, statistically significant differences were found for 11 jurisdictions (3 jurisdictions after controlling for multiple comparisons). Again, all significant differences were in the direction of greater inclusion in the samples where accommodations were permitted.

In contrast, the results for LEP students (figures 2.4 and 2.6) indicate smaller changes and little evidence of a consistent pattern. No statistically significant differences were detected at grade 8. There was one statistically significant difference at grade 4, but it involved a change in exclusion percentages from 1 percent to 0 percent (with rounding). These results appear sensible for at least two reasons. First, in most jurisdictions, LEP students make up a far smaller percentage of the student population than do students with disabilities. This limits the amount of change that one can observe in the former group. Second, as noted earlier, NAEP did not permit alternate-language versions of the reading assessment, an accommodation that might be expected to get considerable use among LEP students. In NAEP mathematics assessments, Spanish versions are made available and this is likely to lower the exclusion rate for LEP students.

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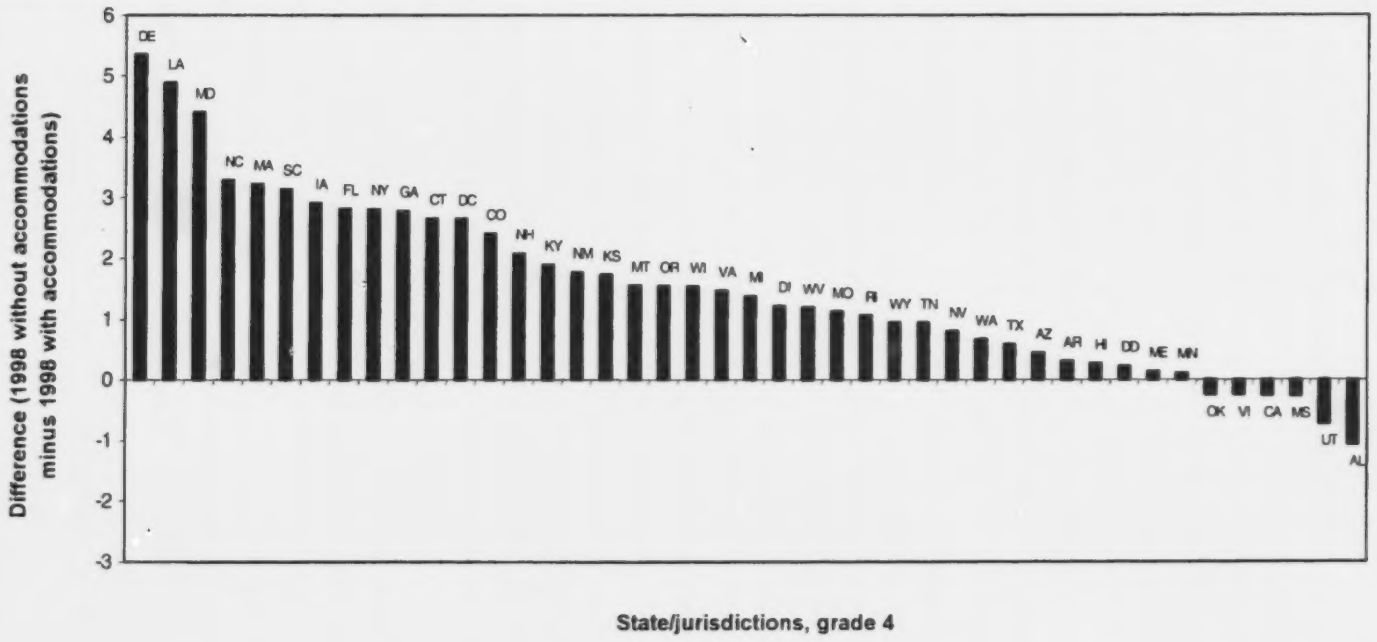
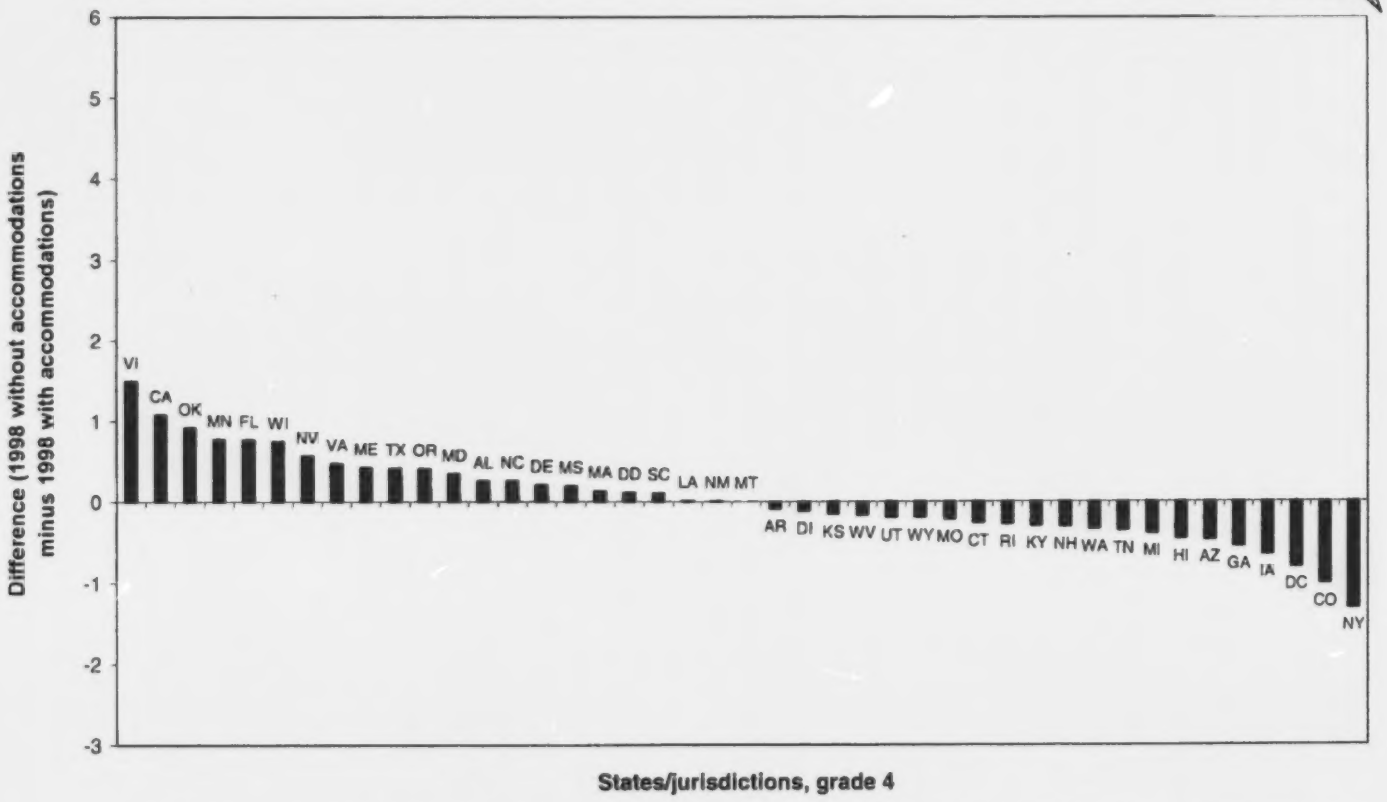
Figure 2.3 – Differences in state reading percentages excluded as SD students, with and without accommodations, grade 4: 1998



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

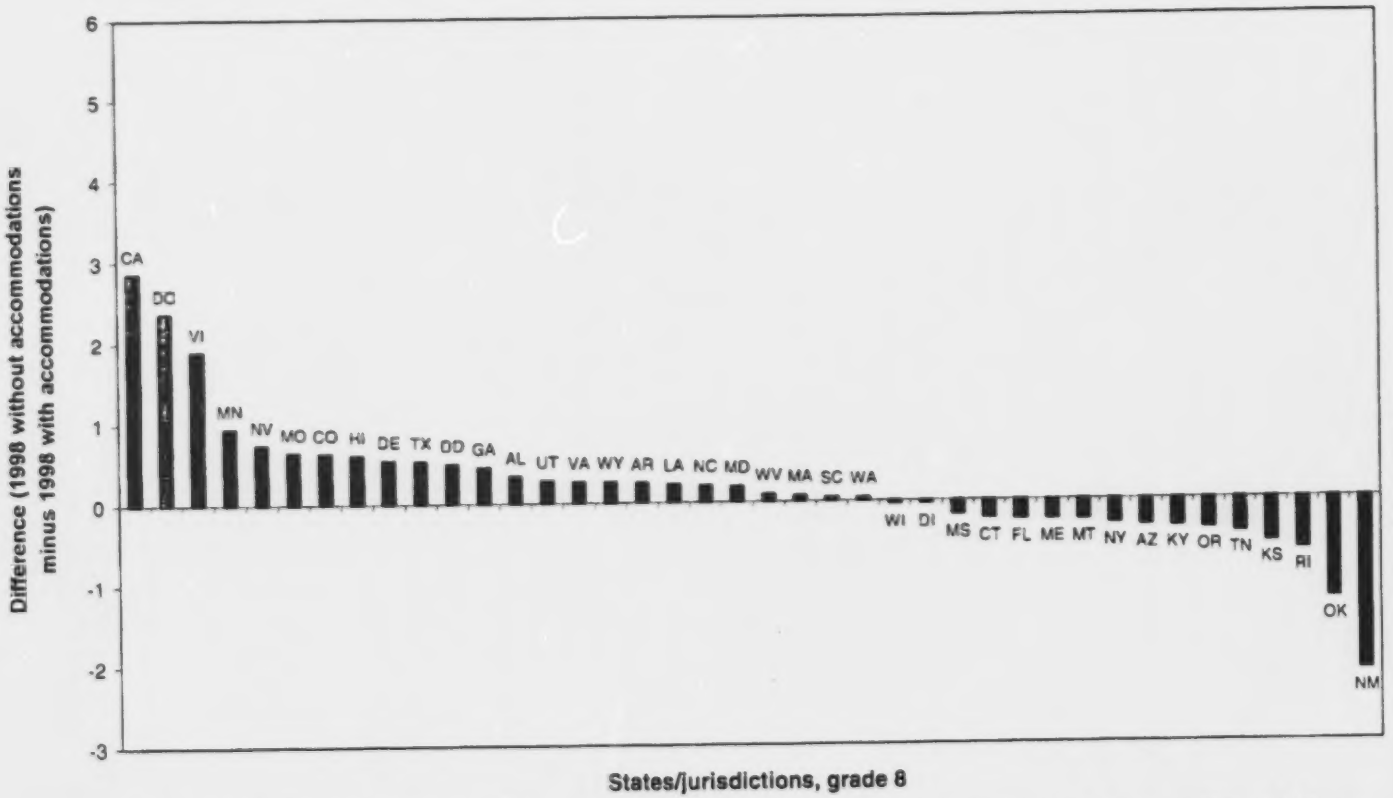
Figure 2.4 — Differences in state reading percentages excluded as LEP students, with and without accommodations, grade 4: 1998


Difference (1998 without accommodations minus 1998 with accommodations)
6
5
4
3
2
1
0
-1
-2
-3
VI CA OK MN FL WI NV VA ME TX OR MD AL NC DE MS MA DD SC LA NM MT AR DI KS WV UT WY MO CT RI KY NH WA TN MI HI AZ GA IA DC CO NY
States/jurisdictions, grade 4

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

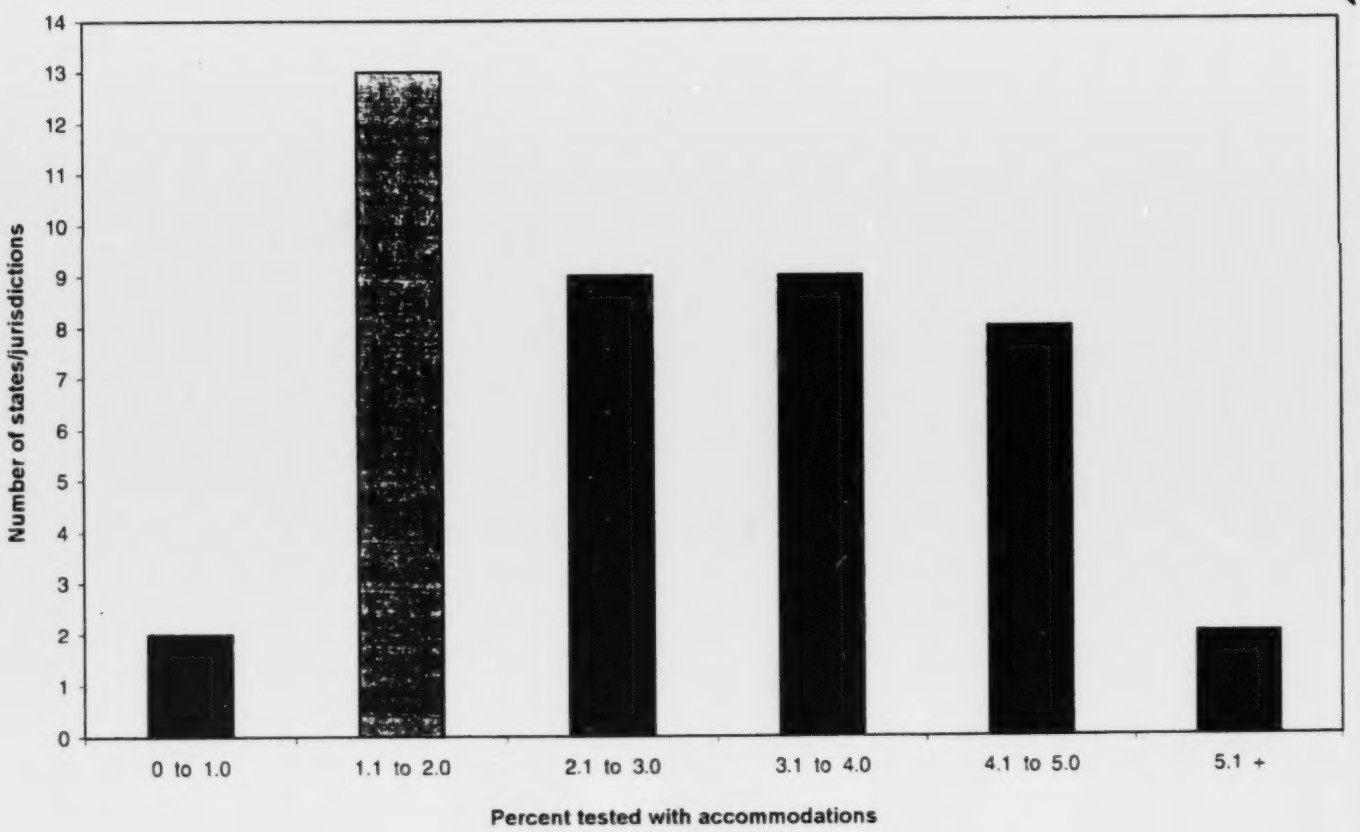
Figure 2.6 — Differences in state reading percentages excluded as LEP students with and without accommodations, grade 8: 1998



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

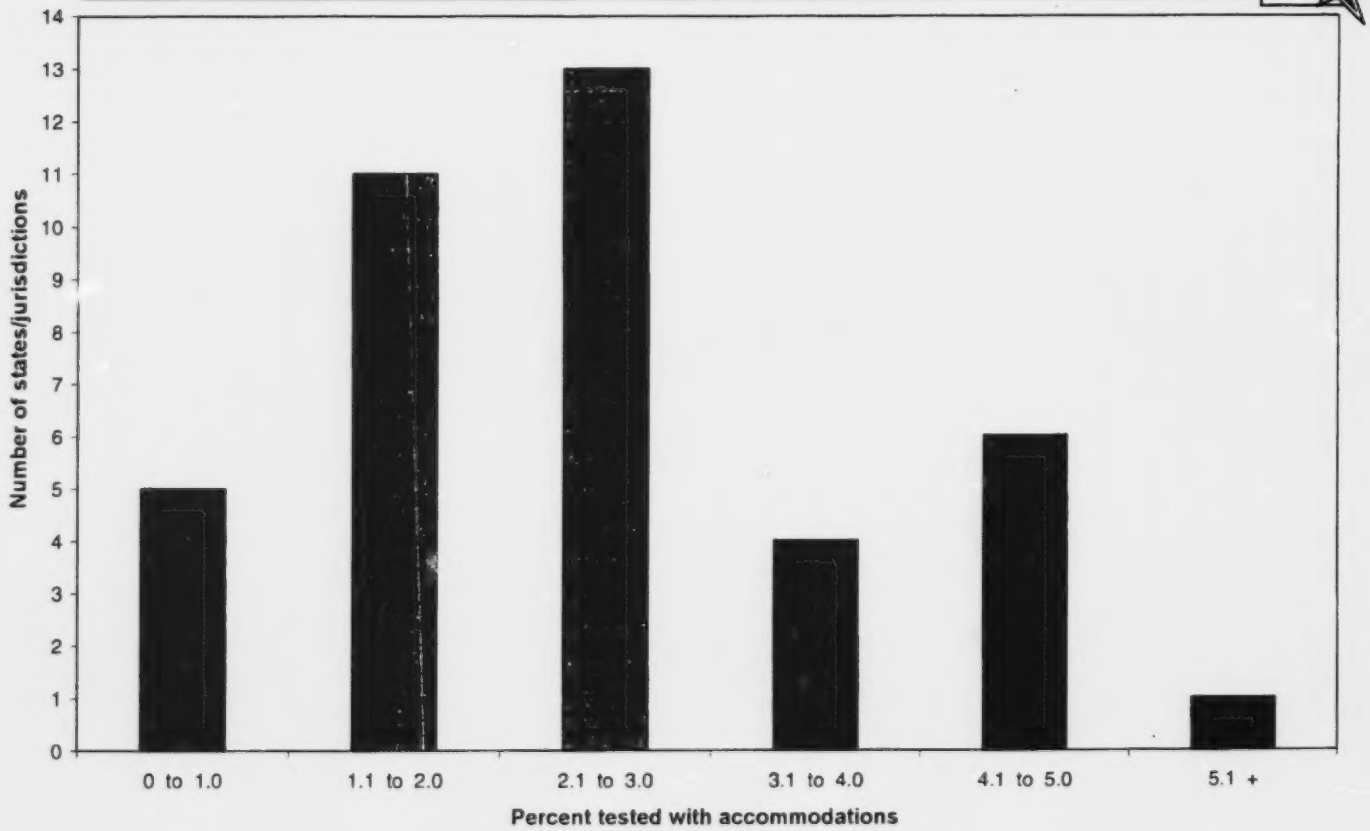
Figures 2.7 through 2.10 present information on the percentages of students who were tested with accommodations in the samples where they were offered in the 1998 assessment. Figures 2.7 and 2.8 present histograms for grades 4 and 8, respectively. While no jurisdiction tested large percentages of students with accommodations, considerable variability was evident, particularly at grade 4. Two fourth-grade jurisdictions tested more than 5.0 percent with accommodations while two jurisdictions tested 1.0 percent or less. At eighth-grade, there was generally slightly less use of accommodations, though 7 of 40 participating jurisdictions tested 4.1 percent or more with accommodations. Figures 2.9 and 2.10 provide information for each jurisdiction on the percentages tested with accommodations. Two sets of percentages are shown in each figure: 1) the percentage of SD students tested with accommodations and, 2) the percentage of LEP students tested with accommodations. In all but a small handful of jurisdictions, the large majority of those tested with accommodations were SD students. As noted above, given the relatively small percentages of LEP students in many jurisdictions, along with the absence of an alternate-language version of the instrument, this result appears sensible.

Figure 2.7 — State reading percentages of students tested with accommodations, grade 4: 1998



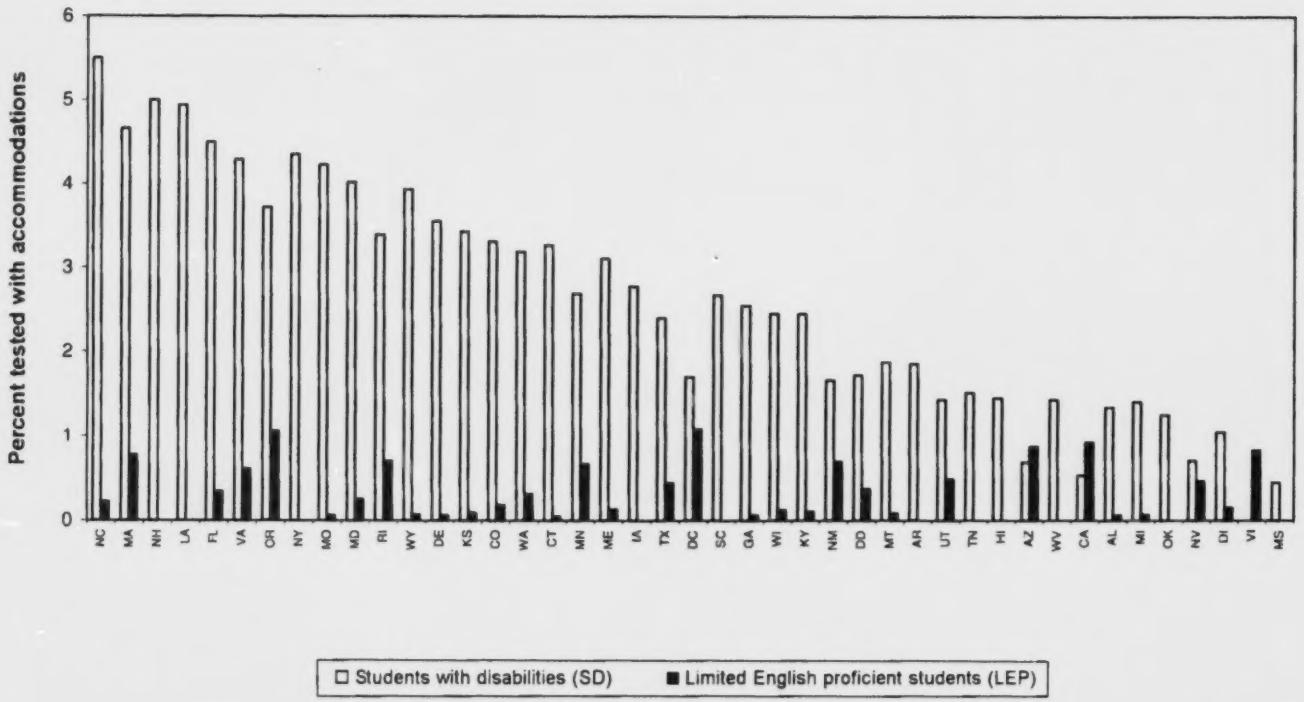
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure 2.8 — State reading percentages of students tested with accommodations, grade 8: 1998



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure 2.9 – State reading percentage of students tested with accommodations, grade 4: 1998


Percent tested with accommodations
0
1
2
3
4
5
6
NC MA NH LA FL VA OR NY MO MD RI WY DE KS CO WA CT MN ME IA TX DC SC GA WI KY NM DD MT AR UT TN HI AZ WV CA AL MI OK NV DI VI MS
Students with disabilities (SD)
Limited English proficient students (LEP)

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure 2.10 – State reading percentage of students tested with accommodations, grade 8: 1998

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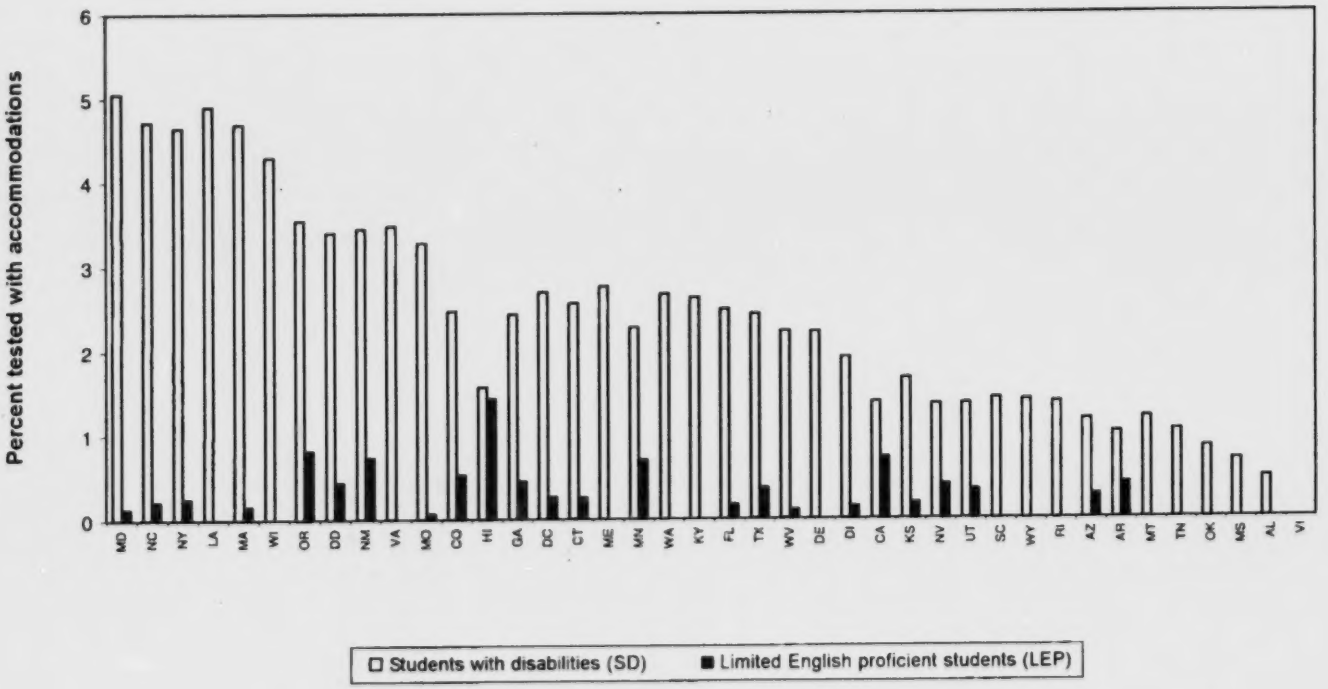
Percent tested with accommodations
0
1
2
3
4
5
6
MD NC NY LA MA WI OR DD NM VA MO CO HI GA DC CT ME MN WA KY FL TX WV DE DI CA KS NV UT SC WY RI AZ AR MT TN OK MS AL VI
Students with disabilities (SD)
Limited English proficient students (LEP)

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Comparing Average Scores from State Samples With Accommodations and Without Accommodations

Of obvious interest to NAEP is the degree to which state NAEP results differ when accommodations are permitted. Changes in average scores and percentages at the various achievement levels might be expected for at least two reasons. First, as evident in the results reviewed so far, allowing accommodations will increase the percentage of students that are assessed in many jurisdictions. To the degree that the students formerly excluded, but now assessed, exhibit different levels of performance than the other assessed students, state NAEP results based on samples of students with and without accommodations can be expected to differ. Second, evidence from the 1996 NAEP mathematics assessments suggested that at least some students with disabilities who could be tested without accommodations will be tested with accommodations, when offered. To the degree that the performance of such students changes when accommodations are provided, state NAEP results can be expected to differ.

As discussed in the previous chapter, separate estimates of the average score in each jurisdiction were obtained from the samples with and without accommodations. Figure 2.11 presents a scatterplot of these average scores for the grade 4 and grade 8 participants. Within each jurisdiction, the average scores with and without accommodations are quite similar. While some scatter is evident and the rank orderings of jurisdictions are not identical, the correlation between these two sets of average scores with and without accommodations exceeds 0.99 at both the grades. In short, the variability in average scores across the jurisdictions far exceeds the variability within a jurisdiction for the two estimates.

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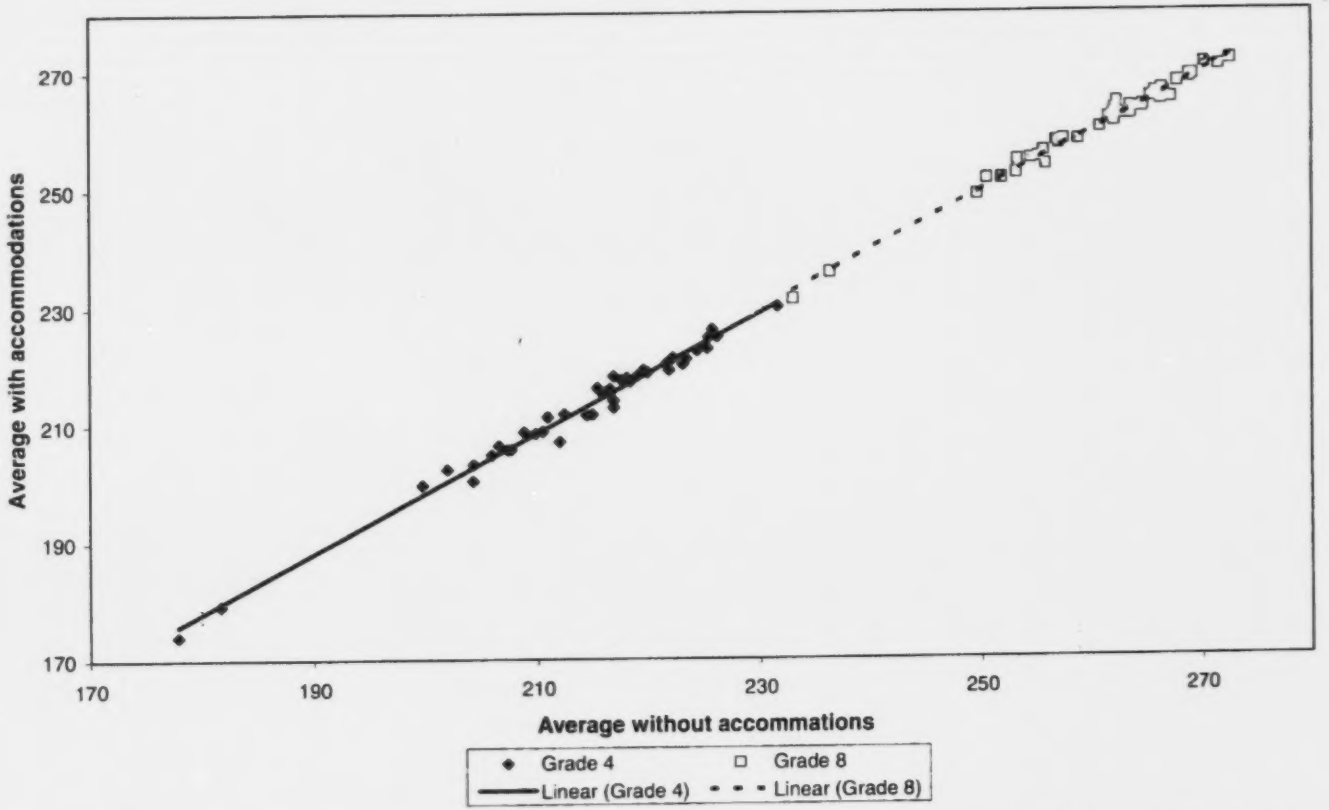
Figure 2.11 — Scatterplot of state average reading scores, with and without accommodations, grades 4 and 8: 1998



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Relationship Between Average Scale Scores and Exclusion Rates

The results in figure 2.11 are perhaps not surprising given that, in most jurisdictions, the changes in exclusion amount to a few percentage points. It is perhaps more informative to look at the differences in average scores within each jurisdiction for the samples with and without accommodations and to examine any relationship between the magnitude of the difference in average scores and the amount of change in the exclusion percentages. Figure 2.12 presents a plot of the grade 4 differences in average scores (i.e., average of the samples with accommodations minus average of the samples where accommodations were not permitted) against the change in inclusion (i.e., the percentage of the students included when accommodations were permitted minus the percentage included when accommodations were not permitted). Figure 2.13 presents the comparable figure at grade 8.

At grade 4 (figure 2.12), two important aspects of the results are worth noting. First, in all but 6 or 7 jurisdictions, average scores appear at least slightly lower in the samples where accommodations were permitted. In 9 of the 43 grade 4 jurisdictions, these differences were statistically significant, though only 1 is statistically significant after controlling for multiple comparisons. Moreover, all of the differences that exceed 1.5 scale score points involve jurisdictions where the average with accommodations was lower than the average without accommodations. Clearly, the increased inclusion that results from providing accommodations appears to bring into the sample students who are generally low performers. However, as will be shown in the subsequent section on achievement levels (pp. 50–52), no state has statistically significant changes in the percentages of students at or above the *Basic* and the *Proficient* achievement levels. Second, there is a relationship between the change in inclusion and difference in average scores. Jurisdictions that exhibited larger gains in inclusion tended to also exhibit larger reductions in their average scores when accommodations were permitted. The correlation across the 43 grade 4 state NAEP jurisdictions was –0.72.

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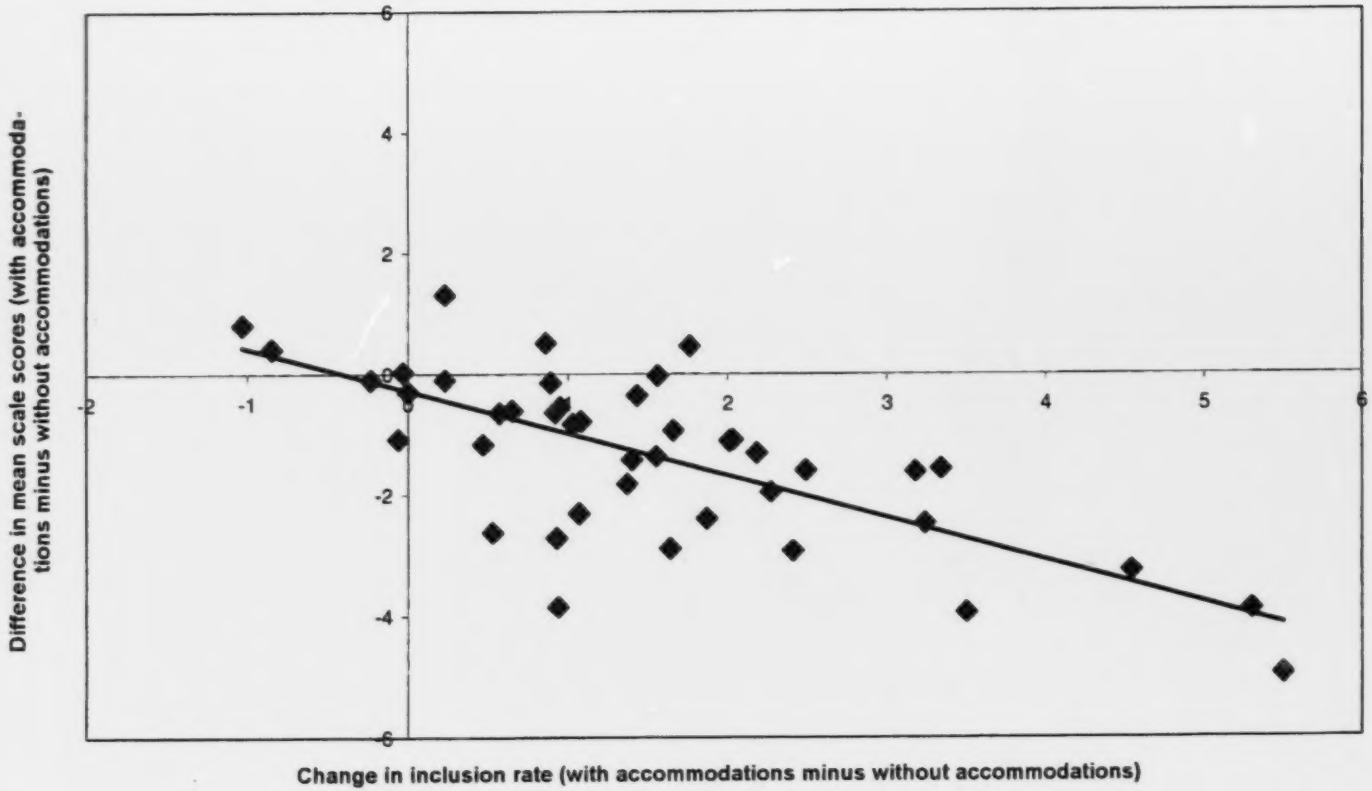
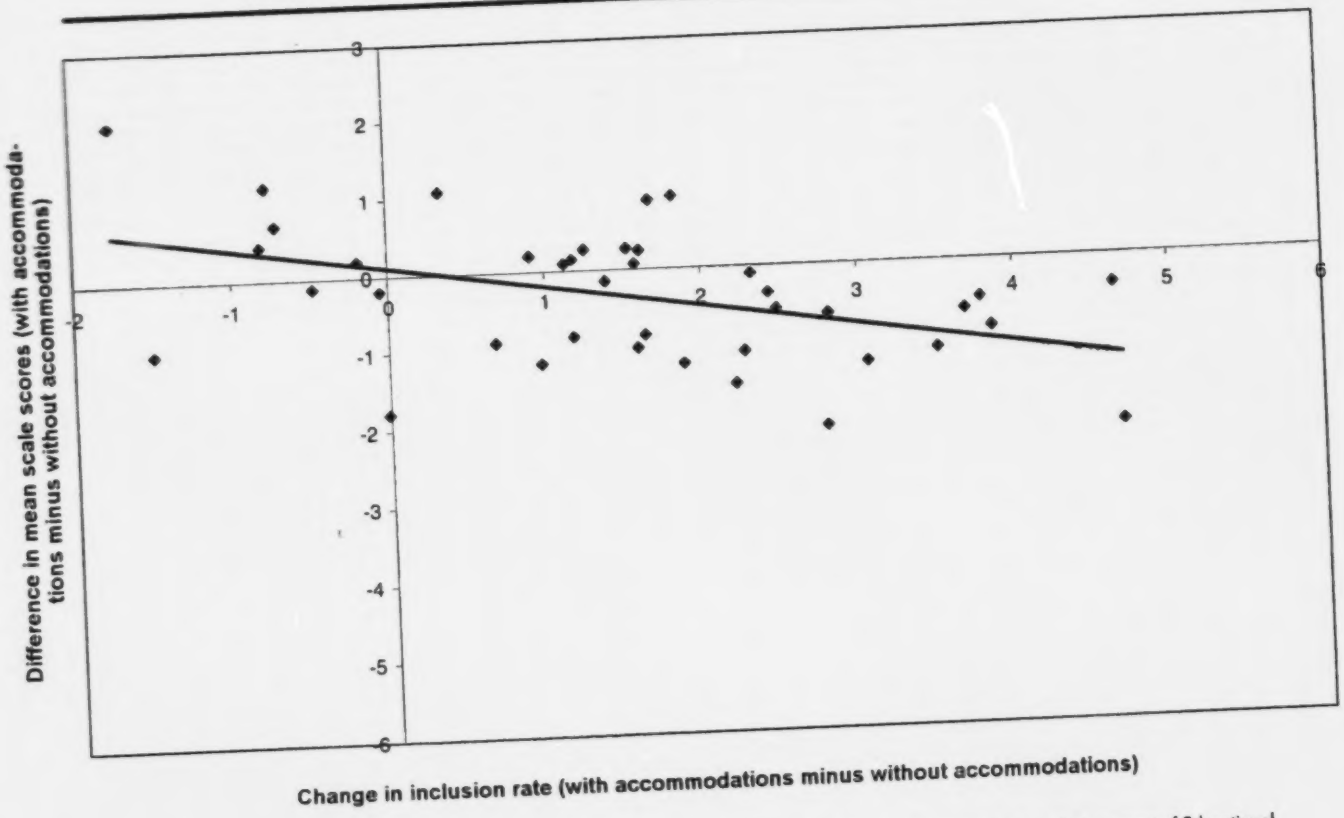
Figure 2.12 – Scatterplot of differences in state average reading scores (with and without accommodations) versus changes in inclusion (with and without accommodations), grade 4: 1998



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure 2.13 – Scatterplot of differences in state average reading scores (with and without accommodations) versus changes in inclusion (with and without accommodations), grade 8: 1998



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

The results at grade 8 (figure 2.13) exhibit a similar pattern, though perhaps not to the same degree as was evident at grade 4. In general, the differences in average scores appear smaller in magnitude at grade 8 than at grade 4. While average scores in the majority of jurisdictions appeared lower when accommodations were provided than when not, none of these apparent differences was statistically significant. Moreover, the reverse was true (i.e., average scores appeared higher in the samples where accommodations were permitted) for 15 of the 40 jurisdictions and 1 of these differences was statistically significant. The correlation between changes in inclusion percentages and changes in average scores across the 40 grade 8 state NAEP jurisdictions was –0.52.

At both grades, there was a substantial, though less than perfect, correlation between differences in inclusion percentages and differences in average scores. The less than perfect correlation is no doubt due to several factors that include the sampling error in estimating both sets of differences, as well as the differences across jurisdictions in the degree to which the newly-included students achieve at levels different from the other assessed students. However, one additional area of interest is any association with the percentages of students that were tested with an accommodation. Considerable variability was evident across jurisdictions in the percentages of students assessed with accommodations. Little is currently known about the degree to which individual student performance changes as a function of being tested with an accommodation. Perhaps at least some of the "less-than-perfect" correlation between inclusion rate and average score differences may be related to the percentage of students in each jurisdiction that was assessed with accommodations.

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Comparing 1998 and 1994 Exclusion Rates and Average Scores

As noted earlier, evolving policies and practices regarding the inclusion of special-needs students pose significant challenges to the state NAEP program in its central mission of accurately monitoring trends in achievement. As such policies and practices have changed, the state NAEP program has seen changes in the percentages of special-needs students included in its samples. Figure 2.14 shows for each grade 4 state NAEP jurisdiction the changes in exclusion percentages from 1994 to 1998 in the reported, original samples (i.e., without accommodations). The figure is sorted from left to right in terms of the magnitude of change.

When based on the samples where accommodations were not offered, the 1998 exclusion percentages were at least 1 percentage-point higher than the corresponding 1994 percentages in 20 of the 36 jurisdictions. A difference this large in the opposite direction was evident in only 4 jurisdictions. If tested one-at-a-time, statistically significant differences in exclusion rates were evident in 12 jurisdictions. All but one of the significant differences was in the direction of more exclusion in 1998 than in 1994. Controlling for multiple comparisons, statistically significant differences were evident in only 5 jurisdictions and all were in the direction of indicating higher exclusion in 1998 than in 1994.

Most of the movement in these exclusion percentages was due to SD students. Statistically significant differences were evident in 12 jurisdictions, 10 of which were in the direction of higher exclusion in 1998 than in 1994 ((J. Mazzeo (personal communication, January 10, 2000)). Even after controlling for multiple comparisons, 9 of these 10 exclusion-percentage increases remained statistically significant. In contrast, statistically significant differences in LEP exclusion rates were evident in only 3 jurisdictions, none of which are statistically significant after controlling for multiple comparisons. It is likely that LEP exclusion rates for the 1998 NAEP reading assessments did not improve because translations to languages other than English were not offered as an accommodation, as they may be in some state assessments.

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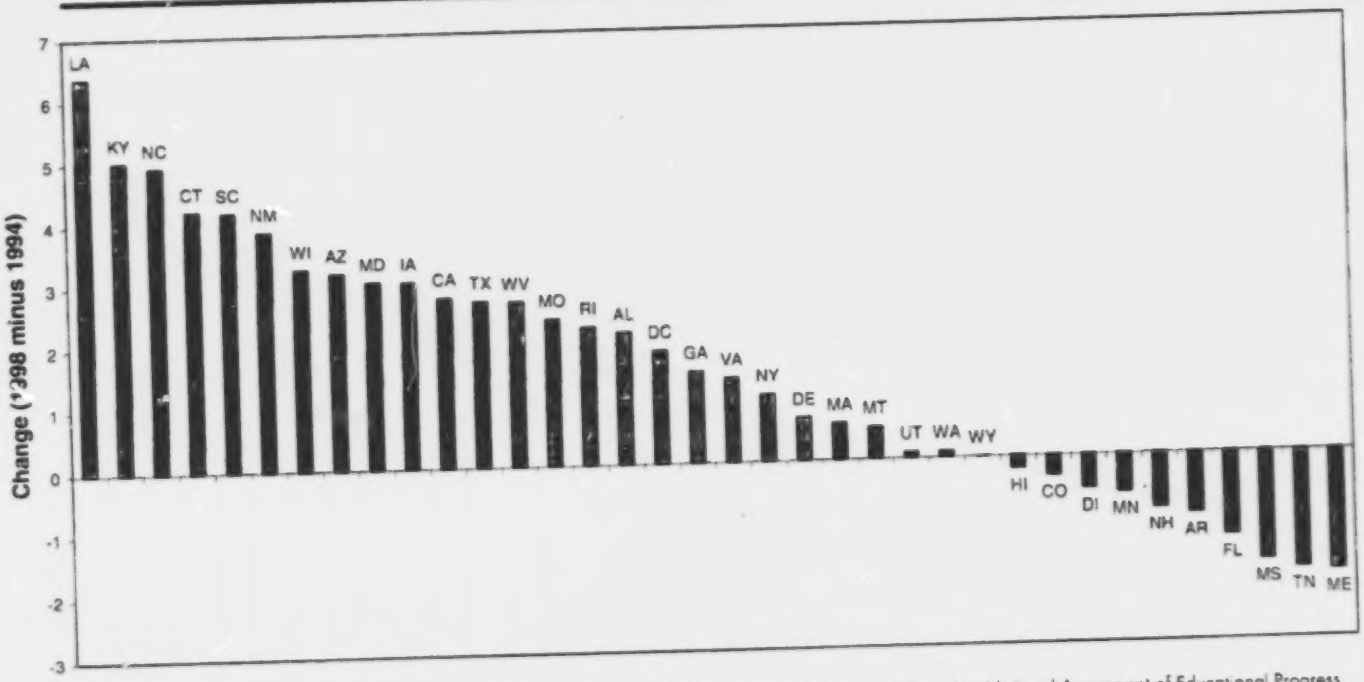
Figure 2.14 — Changes in state reading exclusion percentages from 1994 to 1998 (without accommodations), grade 4: 1994 and 1998



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 1998 Reading Assessments.

As noted earlier, an important question for the NAEP program is whether the offering of accommodations will offset what appears to be a tendency in some jurisdictions toward increased exclusion. Figure 2.15 displays the changes in grade 4 state NAEP exclusion percentages from 1994 (no accommodations permitted) to 1998 for the samples where accommodations were permitted. The 1998 exclusion percentages appeared at least 1.0 percentage point higher in 15 jurisdictions and the difference was statistically significant in 2 of these jurisdictions (1 jurisdiction after controlling for multiple comparisons). However, exclusion percentages appeared at least 1.0 percentage point lower in 14 jurisdictions and the difference was statistically significant in 7 of these jurisdictions (2 jurisdictions after controlling for multiple comparisons).

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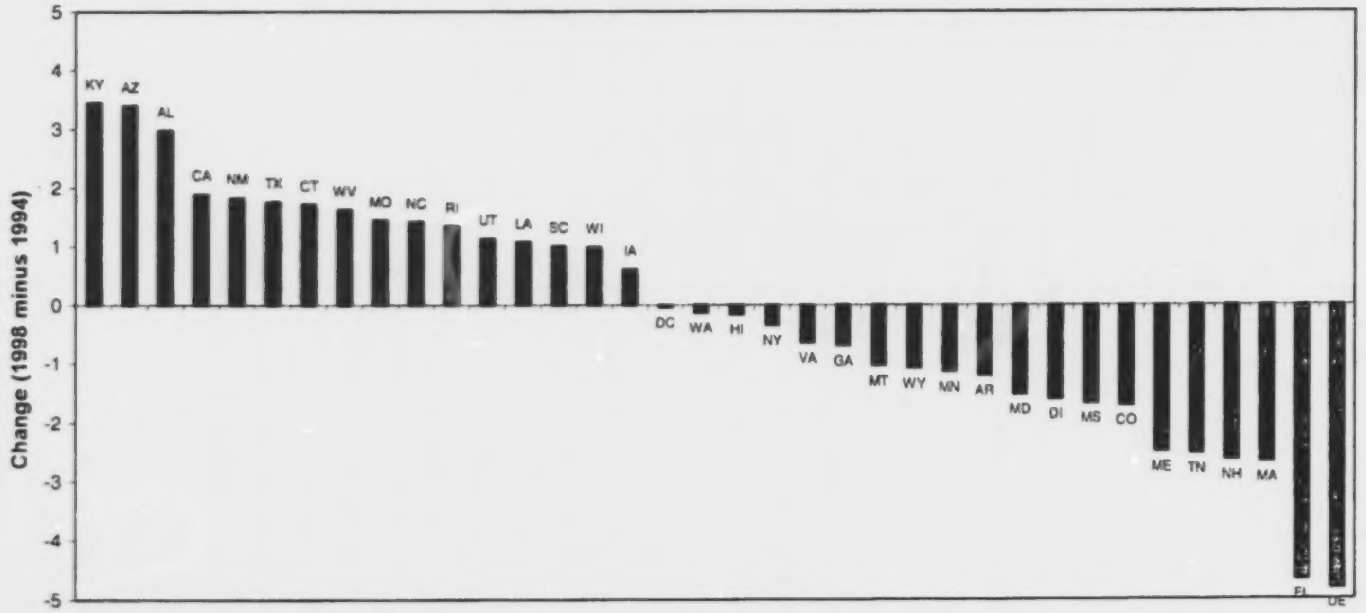
Figure 2.15 — Changes in state reading exclusion percentages from 1994 (without accommodations) to 1998 (with accommodations), grade 4: 1994 and 1998



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 1998 Reading Assessments.

Again, most of the movement was due to students with disabilities; however, when accommodations were offered, there was evidence of *increased* inclusion of students with disabilities in a number of jurisdictions. Statistically significant differences were evident in 10 jurisdictions, 8 of which were in the direction of *lower* exclusion in 1998 than in 1994. Even after controlling for multiple comparisons, 6 of these 8 exclusion-percentage decreases remained statistically significant. Statistically significant differences in LEP exclusion rates were again evident in only 3 jurisdictions, none of which were statistically significant after controlling for multiple comparisons ((J. Mazzeo (personal communication, January 10, 2000)).

Figure 2.16 shows the changes in average NAEP scores from 1994 to 1998 for fourth grade calculated two ways: 1) 1998 without accommodations minus 1994 (white bars), and 2) 1998 with accommodations minus 1994 (black bars). The figure is sorted from left to right in descending order of the magnitude of change calculated from the 1998 samples without accommodations. The 1998 results without accommodations were the "official" results that were published in the 1998 NAEP reading report card. Based on the average scores from the 1998 samples without accommodations, statistically significant increases in average scores were reported for 10 jurisdictions (7 if controls for multiple comparisons are used). Using the 1998 results that permitted accommodations, 7 of these remain statistically significant (2 if controls for multiple comparisons are used). It should be noted that in all but 1 instance, exclusion rates were at least marginally higher for these 10 jurisdictions when accommodations were not permitted. The greater inclusion resulting from allowing accommodations reduced at least slightly the 1998 average scores for 9 states and, in 3 instances, produced trend results that were no longer statistically significant.

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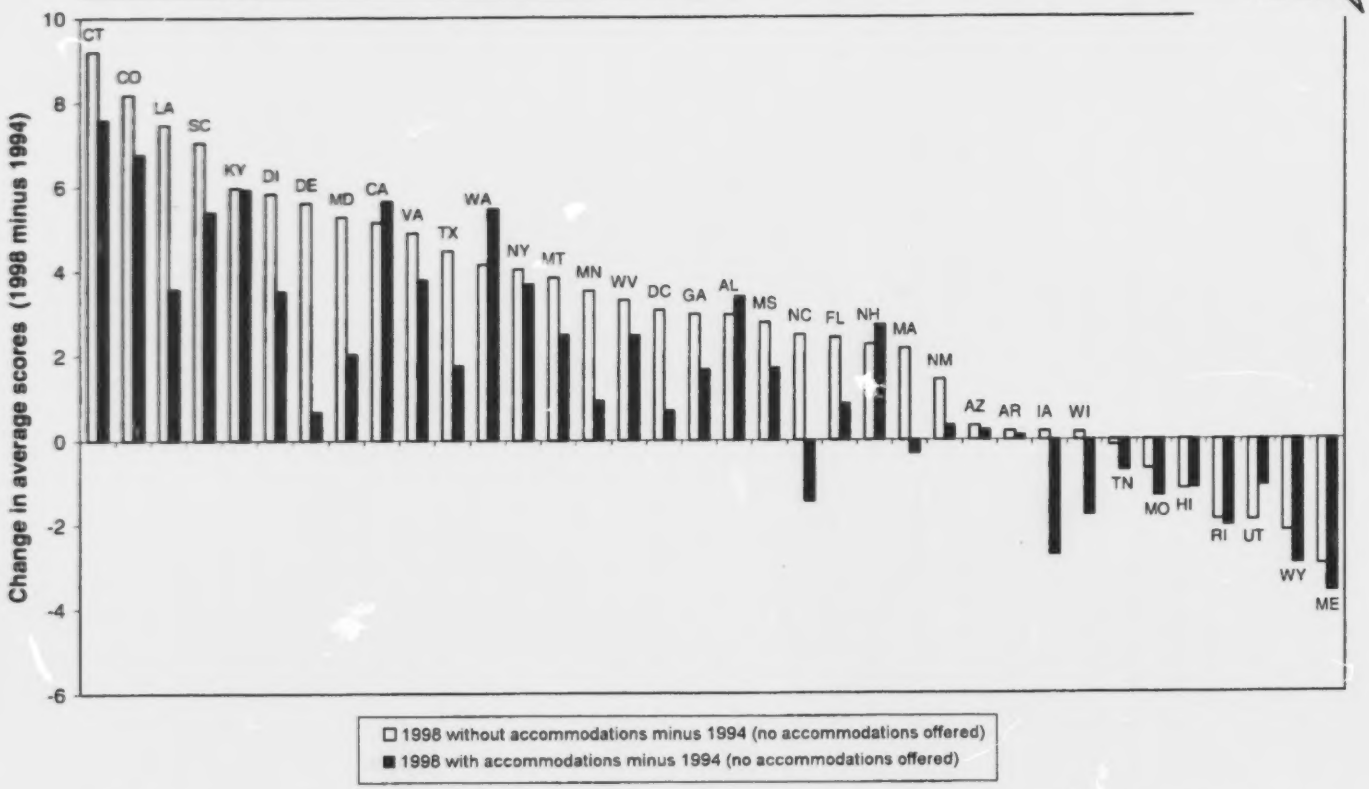
Figure 2.16 — Changes in average state reading scores from 1994 to 1998 (with and without accommodations), grade 4: 1994 and 1998



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 1998 Reading Assessments.

Achievement-Level Results for the Nation

Accommodations not Permitted v. Accommodations Permitted

The results of the 1998 reading assessment were reported not only by scale scores but also according to reading achievement levels for each grade as adopted by the National Assessment Governing Board (NAGB). These achievement levels, *Basic, Proficient,* and *Advanced*, are based on collective judgments about what students should be expected to know and be able to do in the fourth, eighth, and twelfth grades. NAGB reviewed and adopted the recommended achievement levels in 1992, which were derived from judgments of a broadly representative panel that included teachers, education specialists, and members of the general public. The cut scores for each of the three achievement levels have been positioned on the NAEP reading scale, which results in the division of the scale into four score ranges: below *Basic, Basic, Proficient,* and *Advanced.*[2]

Achievement-level results in reading for the nation's fourth-, eighth-, and twelfth-grade students are given in table 2.5 and figure 2.17. In table 2.5, percentages of students at or above each of the achievement levels are presented for both types of samples at each grade level. Figure 2.17 also provides achievement-level results, but these results are represented in terms of the percentage of students at each grade level *within* each achievement-level range for the two samples.

The achievement-level results provided in table 2.5 are cumulative, meaning that the percentage of students described as scoring at or above *Basic* includes the percentage of students scoring at the *Basic* level as well as those who achieved at or above the *Proficient* and *Advanced* levels of performance. The percentage of students achieving at or above the *Proficient* level includes the percentage of students scoring *Proficient* as well as those at *Advanced.* For example, in grade 4, 31 percent of students in the sample where accommodations were permitted achieved at or above *Proficient,* a figure that includes the 8 percent of students who attained the *Advanced* level of performance. Similarly, the 61 percent of students in the sample where accommodations were permitted scoring at or above *Basic* includes the 31 percent that were at or above *Proficient.*

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[2] More detail on the reading achievement levels is available in Donahue, P.L., Voelkl, K.R., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states.* (NCES Publication No. 1999-500). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

Table 2.5. — National percentage of students at or above the reading achievement levels when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998

The Nation's Report Card NAEP

	1998			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	*Advanced*
Grade 4				
Accommodations not permitted	38	62	31	7
Accommodations permitted	39	61	31	8
Grade 8				
Accommodations not permitted	26	74	33	3
Accommodations permitted	27	73	32	3
Grade 12				
Accommodations not permitted	23	77	40	6
Accommodations permitted	24	76	40	6

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Many assume that special-needs students will score at the lower proficiency levels in the NAEP reporting scheme. Although the percentages below *Basic* were consistently one percentage point higher for the accommodations permitted condition than for the accommodations-not-permitted condition, none of these apparent differences in any of the achievement levels at any grade reached statistical significance.

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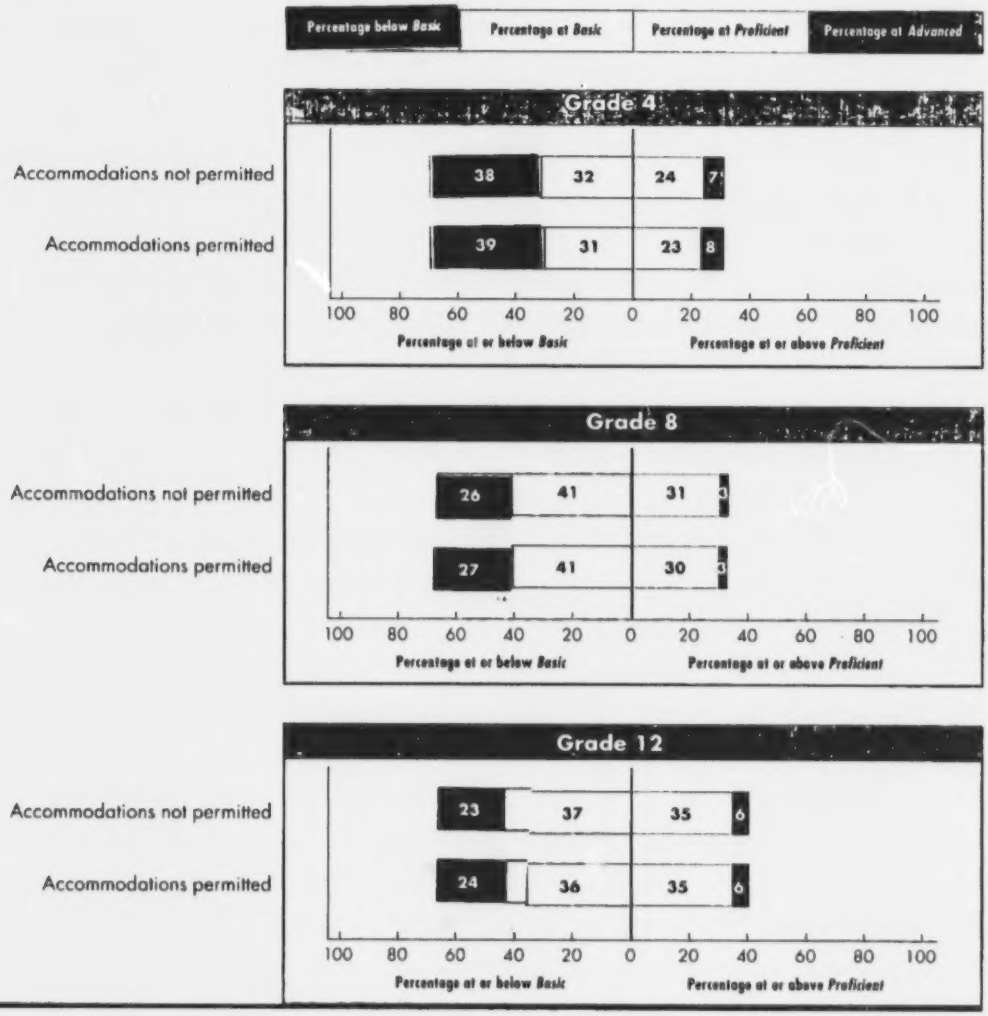
Figure 2.17 — National percentage of students within each reading achievement-level range when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998



NOTE: Percentages within each achievement level may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Achievement-Level Results for the States and Other Jurisdictions

Accommodations not Permitted v. Accommodations Permitted

The percentages of students performing at or above each achievement-level range for the two samples were computed for grades 4 and 8. Table 2.6 displays the percentages of students within the two sets of samples performing at or above each of the achievement-level ranges for each of the states and other jurisdictions at grade 4.

Table 2.6 illustrates that a substantial range exists across the states in the percentages of grade 4 students in both accommodated and non-accommodated student samples scoring at or above each of the achievement levels. These findings reflect the historic pattern of variations in performance across the states. However, from table 2.6, it is equally clear that no significant differences in the percentage of students at each of the achievement levels were found between the two samples within any of the states at grade 4. As such, though differences in mean scale scores were found between samples in grade 4 in several states, the achievement-level results using the samples where accommodations were permitted for the 1998 state report cards would not have been noticeably different for any of the states or other jurisdictions.

Similarly at grade 8 in table 2.7, there were no significant differences in performance between the two samples observed within the achievement levels.

Table 2.6 — Percentage of students at or above each reading achievement-level range for the states, when accommodations were not permitted and when accommodations were permitted, grade 4: 1998

The Nation's Report Card NAEP

	Accommodations not permitted				Accommodations permitted			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	*Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	*Advanced*
Alabama	44	56	24	5	44	56	24	4
Arizona	47	53	22	5	49	51	22	4
Arkansas	45	55	23	4	46	54	23	4
California†	52	48	20	4	52	48	20	4
Colorado	31	69	34	7	33	67	33	6
Connecticut	22	78	46	11	24	76	43	11
Delaware	43	57	25	5	47	53	22	5
Florida	46	54	23	5	47	53	22	4
Georgia	45	55	24	5	46	54	24	5
Hawaii	55	45	17	3	55	45	17	3
Iowa†	30	70	35	7	33	67	33	7
Kansas†	29	71	34	6	30	70	34	7
Kentucky	37	63	29	6	38	62	29	6
Louisiana	52	48	19	3	56	44	17	3
Maine	27	73	36	8	28	72	35	7
Maryland	39	61	29	7	42	58	27	6
Massachusetts†	27	73	37	8	30	70	35	8
Michigan	37	63	28	5	38	62	28	5
Minnesota†	31	69	36	8	33	67	35	8
Mississippi	52	48	18	3	53	47	17	3
Missouri	37	63	29	5	39	61	28	5
Montana†	27	73	37	8	28	72	37	8
Nevada	47	53	21	4	49	51	20	4
New Hampshire†	25	75	38	7	26	74	37	8
New Mexico	48	52	22	4	49	51	21	4
New York†	38	62	29	5	38	62	29	6
North Carolina	38	62	28	6	42	58	27	6
Oklahoma	34	66	30	5	34	66	30	5
Oregon	39	61	28	5	42	58	26	5
Rhode Island	35	65	32	7	36	64	31	7
South Carolina	45	55	22	4	47	53	22	4
Tennessee	42	58	25	5	43	57	25	4
Texas	37	63	29	5	41	59	28	6
Utah	38	62	28	5	38	62	28	5
Virginia	36	64	30	6	38	62	30	6
Washington	37	63	29	6	36	64	30	6
West Virginia	38	62	29	6	40	60	28	5
Wisconsin†	28	72	34	6	31	69	34	6
Wyoming	35	65	30	6	36	64	29	6
Other Jurisdictions								
District of Columbia	72	28	10	3	73	27	10	3
DDESS	35	65	32	8	37	63	32	9
DoDDS	30	70	34	8	33	67	33	7
Virgin Islands	74	26	8	2	76	24	7	2

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table 2.7 — Percentage of students at or above each reading achievement-level range for the states, when accommodations were not permitted and when accommodations were permitted, grade 8: 1998

The Nation's Report Card NAEP

	Accommodations not permitted				Accommodations permitted			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	*Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	*Advanced*
Alabama	34	66	21	1	33	67	22	1
Arizona	27	73	28	2	28	72	27	1
Arkansas	32	68	23	1	32	68	23	1
California†	36	64	22	1	37	63	21	1
Colorado	24	76	30	2	23	77	30	2
Connecticut	18	82	42	4	19	81	40	3
Delaware	34	66	25	2	36	64	23	2
Florida	35	65	23	1	33	67	23	1
Georgia	32	68	25	1	32	68	25	1
Hawaii	40	60	19	1	41	59	19	1
Kansas†	19	81	35	2	19	81	36	2
Kentucky	26	74	29	2	26	74	30	2
Louisiana	36	64	18	1	37	63	17	1
Maine	16	84	42	4	17	83	41	4
Maryland†	28	72	31	4	30	70	31	3
Massachusetts	20	80	36	3	21	79	38	3
Minnesota†	19	81	37	2	22	78	36	2
Mississippi	39	61	19	1	38	62	19	1
Missouri	24	76	29	1	25	75	28	1
Montana†	17	83	38	2	17	83	40	3
Nevada	31	69	24	1	30	70	23	1
New Mexico	30	70	24	1	29	71	23	1
New York†	22	78	34	2	24	76	32	2
North Carolina	24	76	31	2	26	74	30	2
Oklahoma	20	80	29	1	20	80	30	1
Oregon	22	78	33	2	22	78	35	3
Rhode Island	26	74	30	2	24	76	32	3
South Carolina	35	65	22	1	34	66	22	1
Tennessee	29	71	26	1	29	71	27	1
Texas	24	76	28	1	26	74	27	1
Utah	23	77	31	2	23	77	31	1
Virginia	22	78	33	3	22	78	33	3
Washington	23	77	32	2	24	76	32	2
West Virginia	26	74	27	1	25	75	28	1
Wisconsin†	21	79	33	2	22	78	34	2
Wyoming	24	76	29	2	24	76	31	2
Other Jurisdictions								
District of Columbia	56	44	12	1	56	44	11	1
DDESS	22	78	37	6	22	78	39	6
DoDDS	20	80	36	3	20	80	37	4
Virgin Islands	60	40	10	1	61	39	9	0

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500) (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Chapter 3

Comparisons of Samples Without and With Accommodations Permitted in the 1998 Reading Assessment—Results for Subgroups

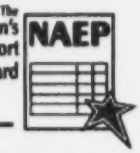
This chapter presents the average reading scale score results for subgroups of the population from the 1998 reading report card for the samples where accommodations were not permitted as compared to the results for the samples where accommodations were permitted.[1] Data for both the nation and the states are included. Comparative results are reported by gender, race/ethnicity, and eligibility for the federal Free/Reduced-Price School Lunch Program.

The 1998 NAEP reading report card also displayed data for four additional subgroups defined by level of parents' education, type of location, region of the country, and type of school. These added subgroups are not displayed for this report because the results are similar to the three reported subgroup types.

Gender

The average reading scale scores for males and females for the 1998 previously published national sample and the 1998 sample where accommodations were permitted are presented in table 3.1.

Table 3.1 — National average reading scores by gender, when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998



	Male		Female	
	Without accommodations	With accommodations	Without accommodations	With accommodations
Grade 4	214	214	220	219
Grade 8	257	256	270	270
Grade 12	283	282	298	298

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

[1] Donahue, P.L., Voelkl, K.R., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states.* (NCES Publication No. 1999–500). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

There were no significant differences in national average reading scale scores between the two sample types in 1998 for either male or female students.

For males, the improvements in scores of 1998 over 1994 in grades 4 and 8 seen in the published report card were preserved in the sample where accommodations were permitted.[2] Similarly for females, the increases in scale scores seen in 1998 over 1994 in grades 8 and 12 were also maintained in the sample where accommodations were permitted.

Table 3.2 displays the average scale scores for each participating state and jurisdiction by gender for grade 4. Did the use of the sample where accommodations were permitted change the scores by gender in any of the jurisdictions? In 8 of the 43 jurisdictions (Connecticut, Delaware, Louisiana, Maryland, Massachusetts, Minnesota, North Carolina, and Texas) there were significant differences by gender between the scores for the two sample types at grade 4. The 8 states with differences are shaded in the table. In every comparison with a significant difference, the higher score came from the sample where accommodations were not permitted. In four states, male students in the accommodated sample had lower scale scores than their peers in the sample where accommodations were not permitted. In 5 states, female students in the sample with accommodations permitted had lower scale scores than their counterparts in the sample where accommodations were not permitted.

[2] Ibid.

Table 3.2 — State average reading scores by gender for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 4: 1998

The Nation's Report Card NAEP

	Male		Female	
	Without accommodations	With accommodations	Without accommodations	With accommodations
Alabama	208	209	214	214
Arizona	201	202	212	211
Arkansas	206	205	212	213
California †	198	198	206	206
Colorado	218	217	225	224
Connecticut	229	225 °	234	235
Delaware	208	204	216	210 °
Florida	203	201	212	210
Georgia	206	205	213	212
Hawaii	194	193	205	206
Iowa †	218	216	228	225
Kansas †	219	218	226	225
Kentucky	216	216	220	219
Louisiana	199	195 °	209	205 °
Maine	222	222	229	228
Maryland	209	206	221	217 °
Massachusetts †	221	219	229	226 °
Michigan	212	211	221	221
Minnesota †	218	215	226	223 °
Mississippi	201	199	208	207
Missouri	211	210	222	221
Montana †	221	220	231	230
Nevada	204	203	211	209
New Hampshire †	222	224	229	228
New Mexico	202	201	209	209
New York †	214	214	218	217
North Carolina	213	208 °	220	218
Oklahoma	219	218	220	220
Oregon	210	208	218	215
Rhode Island	217	218	220	217
South Carolina	207	206	214	212
Tennessee	209	208	216	215
Texas	213	208 °	221	220
Utah	212	213	219	219
Virginia	214	213	223	222
Washington	212	213	222	223
West Virginia	213	212	219	219
Wisconsin †	222	221	226	224
Wyoming	216	215	223	222
Other Jurisdictions				
District of Columbia	177	175	186	183
DDESS	217	214	223	223
DoDDS	219	217	228	226
Virgin Islands	169	166	186	182

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

° Indicates significantly different from original sample.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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When overall average scores at grade 4 were compared by state across the two sample types in the previous chapter (table 2.2), nine states showed significant differences. The pattern of differences across the two sample types by state by gender is slightly different. The eight states showing *gender* differences between means by sample type did not exactly overlap with the nine states (Delaware, Iowa, Louisiana, Maryland, Massachusetts, Minnesota, North Carolina, Oregon, and Wisconsin) that showed *overall* differences in means between the samples without and with accommodations permitted.

Six states (Delaware, Louisiana, Maryland, Massachusetts, Minnesota and North Carolina) had *both* overall average score differences between the two sample types as well as differences by gender. In Connecticut and Texas, males scored lower in the samples where accommodations were permitted, however, there was no difference in the overall state means between the two samples in these two states. In Iowa, Oregon, and Wisconsin there were differences in overall state means between the two sample types, but there were no significant differences by gender.

Table 3.3 displays average scale scores by gender within each state for grade 8. Similar to the findings for overall means at grade 8, there were no significant differences by gender in any state between the two sample types. Thus it is evident that there would have been no impact on the state reports for reading at grade 8, had the samples where accommodations were permitted been used for reporting.

Table 3.3 — State average reading scores by gender for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 8: 1998

The Nation's Report Card NAEP

	Male		Female	
	Without accommodations	With accommodations	Without accommodations	With accommodations
Alabama	251	250	259	261
Arizona	256	255	266	265
Arkansas	250	251	262	262
California †	249	249	257	255
Colorado	257	258	270	270
Connecticut	265	265	278	277
Delaware	249	248	262	260
Florida	247	248	260	261
Georgia	252	252	262	262
Hawaii	243	242	256	256
Kansas †	263	262	273	273
Kentucky	255	256	269	269
Louisiana	245	245	258	258
Maine	265	264	280	279
Maryland †	255	255	269	267
Massachusetts	263	264	274	274
Minnesota †	260	258	275	273
Mississippi	245	247	256	256
Missouri	258	257	269	268
Montana †	263	264	277	277
Nevada	252	253	262	263
New Mexico	252	253	263	263
New York †	263	261	270	269
North Carolina	256	255	270	269
Oklahoma	259	259	271	271
Oregon	259	258	273	275
Rhode Island	257	259	268	269
South Carolina	250	250	259	259
Tennessee	252	250	265	265
Texas	257	256	267	266
Utah	260	259	269	268
Virginia	262	262	271	271
Washington	258	256	272	272
West Virginia	254	255	269	268
Wisconsin †	259	258	273	273
Wyoming	255	256	270	271
Other Jurisdictions				
District of Columbia	230	229	242	241
DDESS	268	266	270	271
DoDDS	265	264	274	274
Virgin Islands	229	227	236	235

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Race/Ethnicity

Table 3.4 presents the average scale scores for the samples without and with accommodations permitted by race/ethnicity for the nation for each of the three grades. No significant differences were noted between the two sample types for any ethnic group in any grade.

Table 3.4 — National average reading scores by race/ethnicity, when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998

	White		Black		Hispanic		Asian/ Pacific Islander		American Indian	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Grade 4	227	226	194	194	196	193	225	220	202	199
Grade 8	272	271	243	244	244	243	271	270	248	246
Grade 12	298	298	270	268	275	274	289	288	276	276

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table 3.5 presents the average scale scores for grade 4 by race/ethnicity for public schools in each of the 43 participating jurisdictions. The data for the "nation" row in tables 3.5 and 3.6 represents public schools only—for comparison with the public school data by state in the body of the table.

Among the 43 jurisdictions, 5 states (Delaware, Louisiana, Maryland, North Carolina and Texas) displayed some significant differences at grade 4 by race between the two sample types. In each case the significantly higher scores (from 3 to 10 scale score points) were found in the samples where accommodations were not permitted. In Delaware, Louisiana, North Carolina and Texas, Black students in the accommodated group had lower scores than their peers in the samples where accommodations were not permitted. In Louisiana, Maryland, and North Carolina, White students in the accommodated samples had lower scores than their peers in the samples where accommodations were not permitted. No significant differences at grade 4 were found between the two sample types in the Hispanic, Asian/Pacific Islander, or American Indian groups. In many jurisdictions, the sample sizes in the latter two groups were too small to permit reliable estimates.

Table 3.5 — State average reading scores by race/ethnicity for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 4: 1998

The Nation's Report Card NAEP

	White		Black		Hispanic		Asian/ Pacific Islander		American Indian	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Nation	225	225	193	193	195	191	222	217	200	197
Alabama	222	223	193	192	190	191	***	***	***	***
Arizona	220	220	190	192	186	189	***	***	202	186
Arkansas	218	217	186	186	187	189	***	***	***	***
California †	217	217	189	185	181	185	215	215	***	***
Colorado	229	227	202	199	202	202	228	***	***	***
Connecticut	240	238	205	205	205	203	244	240	***	***
Delaware	220	219	199	189 °	193	184	***	***	***	***
Florida	219	218	189	186	200	197	***	***	***	***
Georgia	225	222	193	192	193	191	***	***	***	***
Hawaii	211	213	195	192	183	185	201	200	183	***
Iowa †	226	223	192	189	210	205	***	***	***	***
Kansas †	228	227	198	201	207	204	***	***	214	218
Kentucky	221	220	196	196	195	197	***	***	***	***
Louisiana	222	219 °	186	181 °	184	179	***	***	***	***
Maine	227	226	***	***	208	207	***	***	***	***
Maryland	229	225 °	195	193	200	198	230	230	***	***
Massachusetts †	231	229	202	202	200	199	216	216	***	***
Michigan	225	224	191	191	193	192	***	***	***	***
Minnesota †	226	224	190	187	203	198	216	203	***	***
Mississippi	217	217	192	191	183	179	***	***	***	***
Missouri	223	223	190	191	196	190	***	***	***	***
Montana †	230	229	***	***	207	213	***	***	209	200
Nevada	215	214	189	185	195	191	216	215	199	196
New Hampshire †	227	228	***	***	201	208	***	***	***	***
New Mexico	222	221	183	188	199	195	***	***	181	188
New York †	227	228	193	191	194	192	234	235	***	***
North Carolina	227	223 °	200	195 °	196	191	***	***	***	***
Oklahoma	225	225	192	194	207	206	***	***	214	211
Oregon	220	218	202	191	191	185	215	211	197	197
Rhode Island	227	227	197	193	185	186	211	209	***	***
South Carolina	223	221	197	195	189	189	***	***	***	***
Tennessee	220	218	193	194	193	197	***	***	***	***
Texas	232	231	197	191 °	204	201	***	***	***	***
Utah	222	222	***	***	189	191	208	213	190	192
Virginia	226	227	203	200	198	197	230	225	***	***
Washington	221	222	198	201	195	200	220	220	208	211
West Virginia	219	218	192	195	196	197	***	***	***	***
Wisconsin †	230	229	193	187	208	202	***	***	***	***
Wyoming	222	222	***	***	207	202	***	***	205	202
Other Jurisdictions										
District of Columbia	231	235	180	177	168	165	***	***	***	***
DDESS	230	228	209	207	211	213	223	222	***	***
DoDDS	229	228	212	211	216	209	227	226	219	215
Virgin Islands	***	***	181	176	168	164	***	***	***	***

*** Sample size is insufficient to permit a reliable estimate.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

° Indicates significantly different from original sample.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table 3.6 presents the race/ethnicity data for grade 8 for each participating jurisdiction.

There were no significant differences between the two sample types in grade 8 across the ethnic groups in any of the states. This finding of no differences parallels that for the gender variable at grade 8 and suggests that the basic findings in state reports for the ethnicity variable would not change with the use of the samples where accommodations were permitted.

Table 3.6 — State average reading scores by race/ethnicity for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 8: 1998

The Nation's Report Card NAEP

	White		Black		Hispanic		Asian/ Pacific Islander		American Indian	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Nation	270	269	241	242	243	241	269	268	248	246
Alabama	264	265	239	238	235	232	***	***	***	***
Arizona	272	271	246	249	245	245	***	***	243	236
Arkansas	263	263	235	236	230	231	***	***	***	***
California †	269	269	244	239	239	239	259	261	***	***
Colorado	272	271	241	245	244	246	264	262	***	***
Connecticut	279	277	242	244	250	247	281	274	***	***
Delaware	264	263	239	236	244	240	***	***	***	***
Florida	265	265	235	238	242	244	280	279	***	***
Georgia	269	268	239	240	237	242	***	269	***	***
Hawaii	264	262	248	244	239	240	248	248	***	***
Kansas †	272	272	253	250	248	246	***	***	***	***
Kentucky	265	264	242	245	***	***	***	***	***	***
Louisiana	264	263	237	237	230	233	***	***	***	***
Maine	274	273	***	***	***	***	***	***	***	***
Maryland †	273	272	242	240	249	250	284	278	***	***
Massachusetts	274	274	251	248	246	246	267	273	***	***
Minnesota †	272	270	233	228	234	233	248	244	***	***
Mississippi	264	264	239	240	217	222	***	***	***	***
Missouri	267	266	242	242	***	245	***	***	***	***
Montana †	273	274	***	***	249	248	***	***	250	248
Nevada	265	265	240	244	242	242	261	260	***	***
New Mexico	271	271	***	***	249	251	***	***	247	244
New York †	277	276	248	247	249	247	279	279	***	***
North Carolina	271	271	249	247	239	235	***	***	261	259
Oklahoma	269	269	251	251	252	258	***	***	258	256
Oregon	269	269	***	***	247	243	274	272	254	251
Rhode Island	267	269	251	249	237	240	272	267	***	***
South Carolina	265	265	241	241	227	229	***	***	***	***
Tennessee	266	265	238	237	234	231	***	***	***	***
Texas	273	272	245	246	252	250	277	277	***	***
Utah	267	267	***	***	251	244	261	264	***	***
Virginia	274	274	249	249	253	258	271	274	***	***
Washington	269	269	249	242	245	242	264	267	244	247
West Virginia	263	263	246	248	***	***	***	***	***	***
Wisconsin †	271	270	238	235	250	251	***	***	***	***
Wyoming	266	266	***	***	241	245	***	***	244	244
Other Jurisdictions										
District of Columbia	280	282	234	234	233	230	***	***	***	***
DDESS	279	279	253	248	268	273	***	***	***	***
DoDDS	276	275	259	257	263	265	268	270	***	***
Virgin Islands	***	***	234	233	230	226	***	***	***	***

*** Sample size is insufficient to permit a reliable estimate.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Eligibility for the Free/Reduced-Price School Lunch Program

Performance on NAEP assessments as a function of eligibility for the National School Lunch Program has traditionally been reported as representative of the school performance of children whose families are at or below the poverty level. In every NAEP assessment, students who were eligible for this program have lower scores than students who were not eligible. If a significant percentage of low scoring, special-needs students is also eligible for the school lunch program, their scores could be predicted to depress the average of this group even further. The data in table 3.7 indicate that this is not the case. There were no differences between the two sample types on this variable.

Table 3.7 — National average reading scores by Free/Reduced-Price School Lunch program eligibility, when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998

	Eligible		Not eligible		Information not available	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Grade 4	198	196	227	228	227	225
Grade 8	246	245	270	269	272	272
Grade 12	271	270	293	293	296	295

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table 3.8 displays the average scale scores for the two sample types of state data for the free/reduced-price school lunch variable for grade 4. In 3 of the 43 participating jurisdictions there was a significant difference at grade 4 between the two sample types. In Delaware, Louisiana, and North Carolina (shaded in the table) students in the samples where accommodations were not permitted and who were eligible for the free/reduced-price school lunch program had higher scores than the students in the samples where accommodations were permitted. The differences between the average scores were 10 points in Delaware and 4 points in Louisiana and North Carolina.

Table 3.8 — State average reading scores by Free/Reduced-Price School Lunch Program eligibility for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 4: 1998

	Eligible		Not eligible		Information not available	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Nation	198	196	226	227	225	222
Alabama	196	196	226	226	204	211
Arizona	188	189	222	221	212	208
Arkansas	196	196	221	221	213	208
California †	182	182	218	218	212	219
Colorado	204	202	229	227	216	218
Connecticut	205	203	240	238	239	240
Delaware	199	189 °	221	219	***	***
Florida	192	190	222	220	215	217
Georgia	193	192	227	224	218	217
Hawaii	185	185	212	212	***	***
Iowa †	210	205	229	226	216	216
Kansas †	207	206	229	229	236	231
Kentucky	204	206	229	227	***	***
Louisiana	193	189 °	224	221	209	206
Maine	216	215	230	230	226	221
Maryland	195	192	225	222	210	195
Massachusetts †	205	203	233	230	226	224
Michigan	200	200	226	225	214	214
Minnesota †	202	198	230	228	225	218
Mississippi	195	194	220	219	***	***
Missouri	202	202	225	224	222	219
Montana †	215	212	234	233	223	222
Nevada	189	189	217	214	217	221
New Hampshire †	208	211	231	230	220	222
New Mexico	194	193	224	223	214	211
New York †	197	196	232	231	226	223
North Carolina	202	198 °	227	224	223	216
Oklahoma	209	208	230	231	215	215
Oregon	196	192	225	223	223	216
Rhode Island	196	195	231	230	***	***
South Carolina	196	194	223	223	***	***
Tennessee	198	198	225	224	203	195
Texas	203	199	231	230	199	202
Utah	203	205	222	222	220	220
Virginia	200	198	228	226	217	226
Washington	200	203	225	226	230	223
West Virginia	205	205	228	227	***	***
Wisconsin †	206	203	231	230	220	213
Wyoming	208	207	225	224	224	221
Other Jurisdictions						
District of Columbia	174	172	216	215	200	188
DDESS	214	212	226	225	224	215
DoDDS	221	217	228	224	222	221
Virgin Islands	179	175	***	***	164	153

*** Sample size is insufficient to permit a reliable estimate.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

° Indicates significantly different from original sample.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table 3.9 displays the average scale scores for the two sample types for the free/reduced-price lunch variable for grade 8. Among the students eligible for the program, small differences can be observed in table 3.9 between the two sample types, but none of the differences was statistically significant in any jurisdiction. Thus, the use of the samples where accommodations were permitted would have made no real difference in the 1998 state NAEP reading reports at grade 8.

Table 3.9 — State average reading scores by Free/Reduced-Price School Lunch Program eligibility for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 8: 1998

	Eligible		Not eligible		Information not available	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Nation	246	245	269	268	265	264
Alabama	241	241	265	265	***	***
Arizona	245	246	270	269	264	259
Arkansas	242	243	264	264	263	262
California †	237	235	267	267	253	255
Colorado	245	249	271	270	257	252
Connecticut	249	249	277	276	275	273
Delaware	239	238	263	262	258	247
Florida	240	241	262	265	258	259
Georgia	241	240	267	268	262	263
Hawaii	239	238	255	254	260	261
Kansas †	256	254	274	275	***	***
Kentucky	251	251	270	270	262	259
Louisiana	242	243	263	262	244	245
Maine	261	259	277	276	274	277
Maryland †	242	239	269	270	***	***
Massachusetts	248	247	276	276	269	265
Minnesota †	250	248	272	271	271	263
Mississippi	240	241	263	264	249	254
Missouri	249	248	269	269	249	249
Montana †	260	259	275	276	263	270
Nevada	241	245	263	263	259	255
New Mexico	249	250	266	265	258	259
New York †	252	250	276	275	271	270
North Carolina	249	247	271	271	261	258
Oklahoma	258	257	271	270	262	262
Oregon	251	252	271	271	270	267
Rhode Island	245	246	269	272	***	***
South Carolina	240	240	265	266	256	259
Tennessee	242	240	267	267	254	254
Texas	248	246	271	270	***	262
Utah	254	248	269	268	261	267
Virginia	247	248	272	272	271	268
Washington	247	245	270	269	270	271
West Virginia	254	254	268	268	249	255
Wisconsin †	249	250	271	270	267	268
Wyoming	252	252	265	267	***	***
Other Jurisdictions						
District of Columbia	228	229	257	253	234	234
DDESS	261	259	273	274	***	***
DoDDS	257	257	267	267	271	270
Virgin Islands	233	231	***	***	234	233

*** Sample size is insufficient to permit a reliable estimate.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Chapter 4

Concluding Comments

Both increasing inclusion and assuring the valid assessment of special-needs students remain important goals for the NAEP program. Over the 2000 and 2001 assessments, NAEP continued its policy of offering accommodations to SD and LEP students who normally received them in testing when new trend lines were begun. The program also continued its research and transition work in subjects with existing trend lines. However, beginning with the 2002 assessments the official reporting from NAEP will be based on samples of students that include special-needs students who have received accommodations.

The research presented here presents some clear findings. Offering accommodations in state NAEP will increase inclusion in some jurisdictions but the magnitude of the increase, at least at this point in time, will vary somewhat across jurisdictions. It is desired that, eventually, as states move to full implementation of the requirements of IDEA '97 legislation in their own testing programs, fuller, more comparable inclusion percentages will be observed in NAEP.

The differences in performance in the state assessments between the special-needs students without and with accommodations varied by grade. While students who require accommodations are certainly not all low performers, as a group they probably exhibit lower levels of achievement than other groups. At grade 4, the increase in inclusion may result in lower scores than otherwise would have been obtained had accommodations not been permitted. At grade 8, such a pattern was not evident. If, for the moment, one assumes the validity of the scores obtained with accommodations, the results from the more inclusive samples are a more representative indicator of the levels of achievement in the nation and in the jurisdictions that participate in state NAEP.

In examining the comparisons with 1994 results (in figure 2.16), it is clear that, in all but one instance, substantive conclusions about grade trends in scores would not have been materially affected if the results based on samples with accommodations had been used to report scores. However, to overgeneralize this result would be a mistake. The world of educational assessment is in flux. Differences in exclusion percentages with and without accommodations may be substantially larger in the future as more and more states move to full implementation of IDEA '97. The data presented in this report showed a substantial relationship between the changes in average scores with and without accommodations and the changes in inclusion percentages.

Cautions about overgeneralization of results are also warranted both in relation to subject area and to the point of time at which the assessment is given. For example, in the present discussion of 1998 state reading assessment results, more states at grade 4 showed lower average scores for their accommodated samples than at grade 8. For the mathematics assessment in 2000, the findings were different—more states at grade 8 had significantly lower mean scores in accommodated samples than at grade 4.[1] Further, with regard to the point in time of the assessment, the national results for the most recent grade 4 reading assessment in 2000 did reveal for the first time a lower average score for the sample where accommodations were permitted compared to the sample where accommodations were not permitted. This finding differs from the result of no difference shown here for grade 4 in the 1998 national reading assessment.

The NAEP program continues to face significant challenges in the area of inclusion of special-needs students. As a voluntary program, many feel that NAEP inclusion policies will need to remain centered on the concept of assessing students as they are normally assessed in their state testing programs. Because of this, state NAEP results will continue to reflect differences among participating jurisdictions in their own inclusion/exclusion policies. Those policy differences will necessarily bound the degree of precision that the NAEP program can achieve in measuring trends in performance and in comparing achievement across participating jurisdictions.

In all of the statistical comparisons of test scores in this report, data for special-needs students were combined with data from non-special needs students. In the next report, national and state data from the 1998 reading assessment will be combined, and the resulting large samples will permit a detailed analysis of the performance of SD and LEP student groups separately.

[1] Braswell, J.S., Lutkus, A.D., Grigg, W.S., Santapau, S., Tay-Lim, B. & Johnson, M. *The nation's report card: Mathematics 2000*, (NCES Publication No. 2001–517). Washington, DC: National Center for Education Statisitics.

Appendix A

Legislative Context for Assessment of Special-Needs Students

Legislative Context for the Changes in NAEP

Impact of Legislation on State Assessments

Recent legislation at both the federal[1] and state levels now mandates the inclusion of all students in large-scale academic assessments administered in English. The Elementary and Secondary Education Act of 1965 was reauthorized in 1994. Accompanying this reauthorization was the Goals 2000: Educate America Act. Together, these two legislative actions have generated a restructuring and rethinking of school standards and policies nationwide. One of the major issues in each of these includes challenging standards for all students and the accountability of schools to ensure that all students are afforded equitable opportunities to reach those standards. The language of these acts speaks clearly to accountability for all children. The majority of states now have state assessment programs that, under the federal regulations, must include provisions to assess special-needs students. As noted in the following section on the relationship between state assessments and NAEP state assessments, a disjuncture began to emerge between the accommodations policies for special-needs students adopted by state-controlled assessments and the initial lack of accommodations offered within the NAEP state assessments. Exclusion rates began to climb for special-needs students in the state NAEP assessments, whereas these rates tended to be lower in the state-controlled assessments where compliance with the Individuals with Disabilities Education Act (IDEA) legislation mandated the provision of accommodations.

Legislation and Students with Disabilities

Three federal statutes provide basic protections for elementary and secondary students with disabilities. The Individuals with Disabilities Education Act (IDEA) establishes rights and protections for students with disabilities and their families. It also provides federal funds to state education agencies and school districts to assist in educating students with disabilities. The Rehabilitation Act of 1973 (section 504) and Title II of the Americans with Disabilities Act (ADA) prohibit discrimination against individuals with disabilities.

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[1] Title VI of the Civil Rights Act, Equal Educational Opportunities ACT, Goals 2000, Elementary and Secondary Education Act (ESEA), Improving America's Schools Act (IASA), Section 504 of the Rehabilitation Act and Individuals with Disabilities Education Act (IDEA).

In 1997, amendments were made to the Individuals with Disabilities Education Act (IDEA) (P.L. 105–17) which was originally the Education for All Handicapped Children Act (EHA) of 1975. The EHA was designed primarily to ensure that students with disabilities are not denied public education. As a result of these regulations, students with disabilities have been included in public education and receive special services detailed in their Individual Education Programs (IEP's). Part of the new regulations for the IDEA requires states to include students with disabilities in state-wide testing, to report the number of students with disabilities assessed, to offer accommodations or alternate assessments when appropriate, and to report in similar fashion the performance of all students.

Section 504 of the Rehabilitation Act of 1973 states the following:

> *No otherwise qualified individual with a disability in the United States, as defined in section 706(8) of this title, shall, solely by reason of her or his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance or under any program or activity conducted by any Executive agency.*

Title II of the Americans with Disabilities Act of 1990 (Pub. L. No. 101–336) protects individuals with disabilities from discrimination by public entities whether or not the public entity receives federal funds. The responsibilities of public entities under Title II include making reasonable modifications to policies and procedures when required to ensure nondiscrimination of against individuals with disabilities.

Title VI of the Civil Rights Act of 1964 states the following:

> *No person in the United States shall, on the grounds of race, color, or national origin, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.*

Under Title VI, public educational agencies have a responsibility to ensure that students with limited English proficiency are provided with meaningful access to the education program (including, as appropriate, assessment programs) provided to all students.

Legislation and Limited English Proficient Students

As with students with disabilities, legislation also provides for the rights and protection against discrimination toward LEP students. The Equal Educational Opportunities Act of 1974 ensures that all students, regardless of ethnicity, gender, or other characteristics, are entitled to an equal educational opportunity. This was one of the first legislative documents (extending the Civil Rights Act of 1964) to address the education of LEP students.

The legislation in effect at the time of the assessment, Title I of IASA, provided support for improving educational programs for LEP students. Addressing assessment, Title I required state assessment programs to provide test administrations that include LEP students and that "make every effort to use or develop linguistically accessible assessment measures . . ." [US Congress (1994). Improving America's Schools Act. P.L. 103–382. Op.lit. Section 1115 (b)(2).]. The No Child Left Behind Act of 2001 (Pub. L. No. 107–110) continues this support for LEP students.

State Assessments and NAEP State Assessments

Forty-eight of fifty states have internally funded assessment programs for their K-12 education programs.[2] Since 1990 NAEP has made its assessments available to states that choose to provide the larger samples of students required (beyond the national NAEP school samples) to generate reliable state-level performance data. In their local testing programs states have developed rules for allowing testing adaptations and accommodations and/or providing for the exemption of special-needs students from the general assessment. States are also beginning to develop "alternative" assessments for special-needs students. Such alternative assessments seek to measure the same constructs as the traditional assessment but in formats more conducive to allowing special-needs students to demonstrate their knowledge and skills.

States' regulations for excluding special-needs students from their assessments or for providing such students with a range of adaptations/accommodations do not necessarily match the guidelines issued by NAEP. Consequently, the rates of exclusion of special-needs students from state NAEP assessments may not be parallel to the rates reported by state assessment programs. In fact, the NAEP state exclusion rates are often higher than the exclusion rates reported for local state assessments. One reason for this divergence is the slightly more limited range of adaptations/accommodations offered in NAEP compared to some state assessments. For example, most NAEP assessments are not offered in multiple translations for LEP students. Some accommodations, such as a helper reading aloud the reading passages in a reading test, are permitted in some state assessments, but not in the NAEP reading assessment. There may not be a good congruence between the results of state NAEP and the state's own assessment when either state NAEP's exclusion rates for special-needs students greatly exceed those of the state's own assessment program, or where NAEP's exclusion rates significantly increase from one assessment to another.

NAEP's research continues to examine issues of accommodation in large-scale assessment. In the following paper in this series, results for SD and LEP students will be presented separately and the relationship of accommodation conditions to individual test items will be examined.

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[2] Shepard, L. (2000). Why is "teaching the test" a bad thing? *State Education Leader, 18* (1).

Appendix B

Data Appendix

The comparisons presented in this report are based on statistical tests that consider the magnitude of the difference between group averages or percentages and the standard errors of those statistics. This appendix contains the standard errors in parentheses for the estimated averages and percentages in all the tables and figures throughout this report. Because NAEP scores and percentages are based on samples rather than the entire population(s), the results are subject to a measure of uncertainty reflected in the standard errors of the estimates. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. As with the figures and tables in the chapter, significant differences are highlighted.

Table B.1 – Data for Table 2.1 National average reading scores, and exclusion and accommodation rates when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998

	Average scores		Exclusion rates*		Accommodation rates*
	Accommodations not permitted	Accommodations permitted	Accommodations not permitted	Accommodations permitted	
Grade 4	217 (0.8)	216 (0.9)	9	6	3
Grade 8	264 (0.8)	263 (0 8)	6	4	2
Grade 12	291 (0.7)	290 (0.6)	3	2	1

Standard errors of the average scores appear in parentheses.

* Combined rate for SD and LEP students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.2 — Data for Table 2.2 Average reading scores by state when accommodations were not permitted and when accommodations were permitted, grade 4: 1998

The Nation's Report Card NAEP

	Accommodations not permitted		Accommodations permitted	
	Number of students	Average score	Number of students	Average score
Alabama	2,506	211 (1.8)	2,475	211 (1.9)
Arizona	2,432	207 (2.0)	2,423	206 (1.4)
Arkansas	2,580	209 (1.5)	2,573	209 (1.6)
California †	1,722	202 (3.2)	1,713	202 (2.5)
Colorado	2,528	222 (1.3)	2,540	220 (1.4)
Connecticut	2,484	232 (1.9)	2,531	230 (1.6)
Delaware	2,309	212 (1.3)	2,359	207 (1.7)°
Florida	2,463	207 (1.5)	2,532	206 (1.4)
Georgia	2,647	210 (1.6)	2,684	209 (1.4)
Hawaii	2,600	200 (1.8)	2,601	200 (1.5)
Iowa †	2,232	223 (1.2)	2,244	220 (1.6)°
Kansas †	1,845	222 (1.5)	1,856	221 (1.4)
Kentucky	2,442	218 (1.5)	2,456	218 (1.5)
Louisiana	2,587	204 (1.5)	2,658	200 (1.6)^
Maine	2,355	225 (1.2)	2,386	225 (1.4)
Maryland	2,241	215 (1.6)	2,308	212 (1.6)°
Massachusetts †	2,306	225 (1.4)	2,325	223 (1.4)°
Michigan	2,365	217 (1.7)	2,368	216 (1.5)
Minnesota †	2,271	222 (1.5)	2,292	219 (1.7)°
Mississippi	2,552	204 (1.5)	2,554	203 (1.3)
Missouri	2,482	216 (1.7)	2,514	216 (1.3)
Montana †	1,847	226 (1.7)	1,886	225 (1.5)
Nevada	2,597	208 (1.4)	2,613	206 (1.8)
New Hampshire †	1,805	226 (1.3)	1,805	226 (1.7)
New Mexico	2,284	206 (2.0)	2,333	205 (1.4)
New York †	2,221	216 (1.6)	2,256	215 (1.6)
North Carolina	2,514	217 (1.3)	2,552	213 (1.6)°
Oklahoma	2,576	220 (1.1)	2,553	219 (1.2)
Oregon	2,396	214 (1.6)	2,351	212 (1.8)°
Rhode Island	2,533	218 (1.7)	2,500	218 (1.4)
South Carolina	2,411	210 (1.3)	2,433	209 (1.4)
Tennessee	2,627	212 (1.5)	2,599	212 (1.4)
Texas	2,241	217 (2.1)	2,267	214 (1.9)
Utah	2,678	215 (1.3)	2,642	216 (1.2)
Virginia	2,602	218 (1.3)	2,625	217 (1.2)
Washington	2,378	217 (1.3)	2,340	218 (1.4)
West Virginia	2,518	216 (1.5)	2,531	216 (1.7)
Wisconsin †	2,071	224 (1.1)	2,126	222 (1.1)°
Wyoming	2,642	219 (1.6)	2,635	218 (1.5)
Other Jurisdictions				
District of Columbia	2,353	182 (1.4)	2,397	179 (1.2)
DDESS	2,647	220 (1.3)	2,628	219 (1.6)
DoDDS	2,609	223 (1.1)	2,623	221 (1.0)
Virgin Islands	1,469	178 (1.9)	1,468	174 (2.2)

Standard errors of the average scores appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

A/a = Significantly different from the original sample. A= Significance level is adjusted for multiple comparisons across jurisdictions. a= Pairwise significance test not adjusted for multiple comparisons.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table B.3 — Data for Table 2.3 Average reading scores by state when accommodations were not permitted and when accommodations were permitted, grade 8: 1998

The Nation's Report Card NAEP

	Accommodations not permitted		Accommodations permitted	
	Number of students	Average score	Number of students	Average score
Alabama	2,428	255 (1.3)	2,404	255 (1.4)
Arizona	2,325	261 (1.2)	2,410	260 (1.1)
Arkansas	2,412	256 (1.3)	2,423	256 (1.3)
California †	1,944	253 (1.7)	2,020	252 (1.6)
Colorado	2,542	264 (1.1)	2,556	264 (1.0)
Connecticut	2,489	272 (1.1)	2,516	270 (1.0)
Delaware	1,987	256 (1.3)	1,976	254 (1.3)
Florida	2,392	253 (1.7)	2,405	255 (1.4)
Georgia	2,499	257 (1.4)	2,516	257 (1.4)
Hawaii	2,461	250 (1.3)	2,503	249 (1.0)
Kansas †	1,857	268 (1.2)	1,864	268 (1.4)
Kentucky	2,282	262 (1.3)	2,291	262 (1.4)
Louisiana	2,479	252 (1.5)	2,532	252 (1.4)
Maine	2,363	273 (1.2)	2,392	271 (1.2)
Maryland †	2,087	262 (1.8)	2,117	261 (1.8)
Massachusetts	2,141	269 (1.6)	2,209	269 (1.4)
Minnesota †	1,926	267 (1.3)	1,936	265 (1.4)
Mississippi	2,274	251 (1.4)	2,294	251 (1.2)
Missouri	2,526	263 (1.3)	2,539	262 (1.3)
Montana †	1,877	270 (1.1)	1,872	271 (1.3)
Nevada	2,449	257 (1.1)	2,450	258 (1.0)
New Mexico	2,183	258 (1.2)	2,182	258 (1.2)
New York †	1,842	266 (1.6)	1,859	265 (1.5)
North Carolina	2,487	264 (1.1)	2,528	262 (1.1)
Oklahoma	2,182	265 (1.3)	2,172	265 (1.2)
Oregon	2,169	266 (1.4)	2,177	266 (1.5)
Rhode Island	2,393	262 (1.0)	2,343	264 (0.9)
South Carolina	2,429	255 (1.3)	2,437	255 (1.1)
Tennessee	2,159	259 (1.3)	2,136	258 (1.2)
Texas	2,318	262 (1.5)	2,349	261 (1.4)
Utah	2,510	265 (1.1)	2,520	263 (1.0)
Virginia	2,493	266 (1.1)	2,513	266 (1.1)
Washington	2,205	265 (1.3)	2,238	264 (1.2)
West Virginia	2,442	262 (1.2)	2,476	262 (1.0)
Wisconsin †	1,918	266 (1.6)	1,929	265 (1.8)
Wyoming	2,509	262 (1.3)	2,517	263 (1.3)
Other Jurisdictions				
District of Columbia	1,528	236 (2.0)	1,544	236 (2.1)
DDESS	610	269 (3.3)	611	268 (4.5)
DoDDS	2,138	269 (1.0)	2,182	269 (1.0)
Virgin Islands	643	233 (2.9)	643	231 (2.1)

Standard errors of the average scores appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.4 — Data for Figure 2.1 Differences in state reading percentages of excluded students, with and without accommodations, grade 4: 1998

The Nation's Report Card NAEP

	Percentage without accommodations minus percentage with accommodations
Delaware	5.5 (1.1) ^
Louisiana	5.3 (1.1) ^
Maryland	4.5 (1.2) ^
North Carolina	3.5 (0.9) ^
Florida	3.3 (1.5) °
Massachusetts †	3.2 (1.3) °
South Carolina	3.2 (1.2) °
Connecticut	2.5 (1.2) °
Iowa †	2.4 (1.2)
Wisconsin	2.3 (1.2)
Georgia	2.2 (0.9) °
New Mexico	2.0 (1.4)
Virginia	2.0 (0.9) °
District of Columbia	1.9 (1.4)
New Hampshire †	1.8 (1.1)
Kansas †	1.7 (1.0)
Oregon	1.6 (1.2)
Kentucky	1.6 (1.1)
Montana †	1.6 (1.0)
New York †	1.4 (1.2)
Colorado	1.4 (1.2)
Nevada	1.4 (1.0)
Wyoming	1.1 (0.9)
DoDDS	1.1 (0.7)
West Virginia	1.0 (0.8)
Michigan	1.0 (1.0)
Virgin Islands	0.9 (1.3)
Texas	0.9 (2.0)
Missouri	0.9 (1.2)
Rhode Island	0.9 (1.6)
California †	0.9 (2.5)
Tennessee	0.6 (0.9)
Maine	0.6 (1.1)
Minnesota †	0.5 (0.7)
DDESS	0.5 (0.8)
Arkansas	0.2 (1.0)
Washington	0.2 (1.2)
Oklahoma	0.0 (1.3)
Hawaii	0.0 (1.0)
Mississippi	-0.1 (0.7)
Arizona	-0.2 (2.0)
Alabama	-0.9 (0.9)
Utah	-1.0 (1.3)

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Standard errors of the differences appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

A/a = Significantly different from the original sample. A= Significance level is adjusted for multiple comparisons across jurisdictions. a= Pairwise significance test not adjusted for multiple comparisons.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.5 — Data for Figure 2.2 Differences in state reading percentages of excluded students, with and without accommodations, grade 8: 1998

The Nation's Report Card NAEP

	Percentage without accommodations minus percentage with accommodations
Delaware	4.7 (1.9) °
Louisiana	4.7 (1.6) °
California †	3.9 (1.7) °
DDESS	3.8 (3.0)
District of Columbia	3.7 (1.9)
Maryland †	3.5 (1.0) ^
North Carolina	3.1 (1.0) ^
Wisconsin †	2.8 (1.3) °
Minnesota †	2.8 (0.8) ^
Missouri	2.5 (0.8) ^
DoDDS	2.4 (0.7) ^
Massachusetts	2.3 (1.2)
Connecticut	2.3 (1.0) °
New York †	2.2 (1.5)
Maine	1.9 (1.1)
Nevada	1.8 (1.3)
Mississippi	1.7 (0.9)
Hawaii	1.6 (1.1)
Kentucky	1.6 (1.0)
Texas	1.6 (1.2)
Virginia	1.6 (0.9)
Arkansas	1.5 (0.9)
Kansas †	1.4 (0.9)
South Carolina	1.3 (0.7)
Georgia	1.2 (0.8)
Arizona	1.2 (1.0)
Colorado	1.1 (0.9)
Utah	1.0 (0.9)
West Virginia	0.9 (1.0)
Washington	0.7 (0.9)
Wyoming	0.3 (0.8)
Virgin Islands	0.0 (0.0)
Alabama	-0.1 (1.0)
Oregon	-0.2 (1.0)
Oklahoma	-0.5 (0.9)
Montana †	-0.7 (0.8)
Florida	-0.8 (0.8)
New Mexico	-0.8 (2.0)
Tennessee	-1.5 (1.2)
Rhode Island	-1.7 (1.1)

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Standard errors of the differences appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

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DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.6 — Data for Figure 2.3 Differences in state reading percentages excluded as SD students, with and without accommodations, grade 4: 1998

The Nation's Report Card NAEP

	Percentage without accommodations minus percentage with accommodations
Delaware	5.4 (1.1) ^
Louisiana	4.9 (1.1) ^
Maryland	4.4 (1.4) ^
North Carolina	3.3 (0.9) ^
Massachusetts †	3.2 (1.0) ^
South Carolina	3.1 (1.2) ^
Iowa †	2.9 (1.2) °
Florida	2.8 (1.1) °
New York †	2.8 (0.9) ^
Georgia	2.8 (0.9) ^
Connecticut	2.7 (1.0) ^
District of Columbia	2.7 (0.9) ^
Colorado	2.4 (0.8) ^
New Hampshire †	2.1 (1.1)
Kentucky	1.9 (1.1)
New Mexico	1.8 (1.0)
Kansas †	1.7 (0.9)
Montana †	1.6 (1.0)
Oregon	1.5 (1.1)
Wisconsin †	1.5 (1.1)
Virginia	1.5 (0.8)
Michigan †	1.4 (1.0)
DoDDS	1.2 (0.5) °
West Virginia	1.2 (0.8)
Missouri	1.1 (1.2)
Rhode Island	1.1 (1.0)
Wyoming	0.9 (0.9)
Tennessee	0.9 (0.9)
Nevada	0.8 (0.6)
Washington	0.7 (0.9)
Texas	0.6 (1.0)
Arizona	0.4 (0.9)
Arkansas	0.3 (1.0)
Hawaii	0.3 (0.8)
DDESS	0.2 (0.7)
Maine	0.1 (1.1)
Minnesota †	0.1 (0.6)
Oklahoma	-0.2 (1.3)
Virgin Islands	-0.3 (2.1)
California †	-0.3 (0.8)
Mississippi	-0.3 (0.6)
Utah	-0.7 (0.8)
Alabama	-1.1 (0.9)

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Standard errors of the differences appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

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DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.7 — Data for Figure 2.4 Differences in state reading percentages excluded as LEP students, with and without accommodations, grade 4: 1998

	Percentage without accommodations minus percentage with accommodations
Virgin Islands	1.5 (1.4)
California †	1.1 (2.4)
Oklahoma	0.9 (0.4) °
Minnesota †	0.8 (0.4)
Florida	0.8 (0.7)
Wisconsin †	0.7 (0.3)
Nevada	0.6 (0.8)
Virginia	0.5 (0.5)
Maine	0.4 (0.3)
Texas	0.4 (1.7)
Oregon	0.4 (0.5)
Maryland	0.4 (0.3)
Alabama	0.3 (0.4)
North Carolina	0.3 (0.3)
Delaware	0.2 (0.2)
Mississippi	0.2 (0.2)
Massachusetts †	0.1 (0.7)
DDESS	0.1 (0.4)
South Carolina	0.1 (0.2)
Louisiana	0.0 (0.5)
New Mexico	0.0 (0.8)
Montana †	0.0 (0.0)
Arkansas	–0.1 (0.3)
DoDDS	–0.1 (0.4)
Kansas †	–0.2 (0.6)
West Virginia	–0.2 (0.1)
Utah	–0.2 (0.8)
Wyoming	–0.2 (0.4)
Missouri	–0.2 (0.2)
Connecticut	–0.3 (0.6)
Rhode Island	–0.3 (1.1)
Kentucky	–0.3 (0.2)
New Hampshire †	–0.3 (0.3)
Washington	–0.3 (0.4)
Tennessee	–0.4 (0.3)
Michigan	–0.4 (0.6)
Hawaii	–0.5 (0.6)
Arizona	–0.5 (1.7)
Georgia	–0.6 (0.5)
Iowa †	–0.7 (0.5)
District of Columbia	–0.8 (1.0)
Colorado	–1.0 (0.8)
New York †	–1.3 (0.8)

Standard errors of the differences appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

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DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.8 — Data for Figure 2.5 Differences in state reading percentages excluded as SD students, with and without accommodations, grade 8: 1998

The Nation's Report Card NAEP

	Percentage without accommodations minus percentage with accommodations
Louisiana	4.4 (1.5) ª
Delaware	4.2 (2.0)
DDESS	3.5 (2.5)
Maryland †	3.3 (1.1) ^
North Carolina	2.8 (1.0) ª
Wisconsin †	2.7 (1.2) ª
DoDDS	2.7 (0.7) ^
New York †	2.6 (1.1) ª
Connecticut	2.4 (1.0) ª
California †	2.1 (1.0)
Maine	2.1 (1.1)
Minnesota †	2.1 (0.6) ^
Massachusetts	2.1 (1.0)
Kansas †	2.0 (1.0) ª
Mississippi	1.9 (0.9) ª
Missouri	1.8 (0.9) ª
Kentucky	1.8 (1.0)
District of Columbia	1.7 (2.3)
Arizona	1.6 (0.8)
Virginia	1.6 (0.9)
Arkansas	1.4 (0.9)
South Carolina	1.3 (0.7)
New Mexico	1.3 (1.2)
Hawaii	1.3 (0.9)
Texas	1.3 (0.9)
Nevada	1.2 (0.9)
West Virginia	1.0 (1.0)
Georgia	0.9 (0.9)
Colorado	0.7 (0.7)
Utah	0.6 (0.8)
Washington	0.5 (0.9)
Oklahoma	0.5 (0.9)
Oregon	0.3 (0.8)
Wyoming	0.2 (0.8)
Alabama	–0.3 (1.0)
Florida	–0.5 (0.7)
Montana †	–0.7 (0.8)
Tennessee	–1.1 (1.2)
Rhode Island	–1.1 (0.9)
Virgin Islands	–2.1 (3.8)

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Standard errors of the differences appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

A/a = Significantly different from the original sample. A= Significance level is adjusted for multiple comparisons across jurisdictions. a= Pairwise significance test not adjusted for multiple comparisons.

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DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.9 — Data for Figure 2.6 Differences in state reading percentages excluded as LEP students with and without accommodations, grade 8: 1998

	Percentage without accommodations minus percentage with accommodations
California †	2.9 (1.4)
District of Columbia	2.4 (2.6)
Virgin Islands	1.9 (3.7)
Minnesota †	0.9 (0.5)
Nevada	0.7 (0.7)
Missouri	0.6 (0.6)
Colorado	0.6 (0.5)
Hawaii	0.6 (0.5)
Delaware	0.5 (0.2)
Texas	0.5 (0.7)
DDESS	0.5 (1.0)
Georgia	0.4 (0.3)
Alabama	0.3 (0.2)
Utah	0.3 (0.4)
Virginia	0.3 (0.4)
Wyoming	0.3 (0.2)
Arkansas	0.2 (0.4)
Louisiana	0.2 (0.4)
North Carolina	0.2 (0.4)
Maryland †	0.2 (0.4)
West Virginia	0.1 (0.2)
Massachusetts	0.1 (0.7)
South Carolina	0.0 (0.1)
Washington	0.0 (0.4)
Wisconsin †	0.0 (0.4)
DoDDS	0.0 (0.4)
Mississippi	–0.2 (0.2)
Connecticut	–0.2 (0.4)
Florida	–0.2 (0.5)
Maine	–0.2 (0.3)
Montana †	–0.2 (0.2)
New York †	–0.3 (0.8)
Arizona	–0.3 (0.6)
Kentucky	–0.3 (0.2)
Oregon	–0.4 (0.5)
Tennessee	–0.4 (0.4)
Kansas †	–0.5 (0.3)
Rhode Island	–0.6 (0.6)
Oklahoma	–1.2 (0.6)
New Mexico	–2.1 (1.5)

Standard errors of the differences appear in parentheses.

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DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

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SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.10 — Data for Figure 2.9 State reading percentage of students tested with accommodations, grade 4: 1998

	Students with disabilities	Limited English proficient students
North Carolina	5.5 (0.8)	0.2 (0.1)
Massachusetts	4.7 (1.0)	0.8 (0.4)
New Hampshire	5.0 (1.0)	0.0 (0.0)
Louisiana	4.9 (0.8)	0.0 (0.0)
Florida	4.5 (1.0)	0.3 (0.1)
Virginia	4.3 (0.9)	0.6 (0.5)
Oregon	3.7 (0.8)	1.1 (0.5)
New York †	4.4 (0.7)	0.0 (0.0)
Missouri	4.2 (0.7)	0.1 (0.1)
Maryland †	4.0 (0.7))	0.3 (0.2)
Rhode Island	3.4 (0.7)	0.7 (0.3)
Wyoming	3.9 (1.0)	0.1 (0.1)
Delaware	3.6 (0.9)	0.1 (0.1)
Kansas †	3.4 (0.8)	0.1 (0.1)
Colorado	3.3 (0.7)	0.2 (0.1)
Washington	3.2 (0.7)	0.3 (0.2)
Connecticut	3.3 (0.7)	0.1 (0.1)
Minnesota †	2.7 (0.8)	0.7 (0.5)
Maine	3.1 (0.6)	0.1 (0.1)
Iowa	2.8 (0.8)	0.0 (0.0)
Texas	2.4 (0.5)	0.4 (0.3)
District of Columbia	1.7 (0.5)	1.1 (0.5)
South Carolina	2.7 (0.7)	0.0 (0.0)
Georgia	2.6 (0.6)	0.1 (0.1)
Wisconsin †	2.5 (0.5)	0.1 (0.1)
Kentucky	2.5 (0.5)	0.1 (0.1)
New Mexico	1.7 (0.6)	0.7 (0.5)
DDESS	1.7 (0.7)	0.4 (0.3)
Montana †	1.9 (0.6)	0.1 (0.1)
Arkansas	1.9 (0.6)	0.0 (0.0)
Utah	1.4 (0.5)	0.5 (0.3)
Tennessee	1.5 (0.5)	0.0 (0.0)
Hawaii	1.5 (0.5)	0.0 (0.0)
Arizona	0.7 (0.3)	0.9 (0.7)
West Virginia	1.4 (0.5)	0.0 (0.0)
California †	0.5 (0.3)	0.9 (0.7)
Alabama	1.3 (0.6)	0.1 (0.1)
Michigan	1.4 (0.5)	0.1 (0.1)
Oklahoma	1.3 (0.4)	0.0 (0.0)
Nevada	0.7 (0.3)	0.5 (0.2)
DoDDS	1.1 (0.4)	0.2 (0.1)
Virgin Islands	0.0 (0.0)	0.8 (0.9)
Mississippi	0.5 (0.2)	0.0 (0.0)

Standard errors of the percentages appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.11 — Data for Figure 2.10 State reading percentage of students tested with accommodations, grade 8: 1998

	Students with disabilities	Limited English proficient students
Maryland †	5.1 (0.9)	0.1 (0.1)
North Carolina	4.7 (0.7)	0.2 (0.1)
New York †	4.7 (0.8)	0.3 (0.3)
Louisiana	4.9 (0.9)	0.0 (0.0)
Massachusetts	4.7 (1.0)	0.2 (0.2)
Wisconsin †	4.3 (1.4)	0.0 (0.0)
Oregon	3.6 (0.8)	0.8 (0.3)
DDESS	3.4 (2.1)	0.4 (0.5)
New Mexico	3.5 (1.0)	0.7 (0.4)
Virginia	3.5 (0.7)	0.0 (0.0)
Missouri	3.3 (0.6)	0.1 (0.1)
Colorado	2.5 (0.5)	0.5 (0.3)
Hawaii	1.6 (0.7)	1.4 (0.9)
Georgia	2.4 (0.5)	0.5 (0.3)
District of Columbia	2.7 (1.3)	0.3 (0.3)
Connecticut	2.6 (0.4)	0.3 (0.2)
Maine	2.8 (0.9)	0.0 (0.0)
Minnesota †	2.3 (0.7)	0.7 (0.4)
Washington	2.7 (0.7)	0.0 (0.0)
Kentucky	2.6 (0.7)	0.0 (0.0)
Florida	2.5 (0.6)	0.2 (0.1)
Texas	2.4 (0.7)	0.4 (0.2)
West Virginia	2.2 (0.5)	0.1 (0.1)
Delaware	2.2 (0.9)	0.0 (0.0)
DoDDS	1.9 (0.7)	0.2 (0.1)
California †	1.4 (0.5)	0.7 (0.3)
Kansas †	1.7 (0.7)	0.2 (0.2)
Nevada	1.4 (0.4)	0.4 (0.4)
Utah	1.4 (0.5)	0.3 (0.2)
South Carolina	1.4 (0.4)	0.0 (0.0)
Wyoming	1.4 (0.4)	0.0 (0.0)
Rhode Island	1.4 (0.6)	0.0 (0.0)
Arizona	1.2 (0.3)	0.3 (0.2)
Arkansas	1.0 (0.5)	0.4 (0.3)
Montana †	1.2 (0.4)	0.0 (0.0)
Tennessee	1.0 (0.4)	0.0 (0.0)
Oklahoma	0.8 (0.4)	0.0 (0.0)
Mississippi	0.7 (0.3)	0.0 (0.0)
Alabama	0.5 (0.3)	0.0 (0.0)
Virgin Islands	0.0 (0.0)	0.0 (0.0)

Standard errors of the percentages appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.12 —Data for Figure 2.14 Changes in state reading exclusion percentages from 1994 to 1998 (without accommodations), grade 4: 1998

The Nation's Report Card NAEP

	Percentage excluded in 1998 minus percentage excluded in 1994
Louisiana	6.4 (1.2) ^
Kentucky	5.0 (1.1) ^
North Carolina	4.9 (1.0) ^
Connecticut	4.2 (1.8) °
South Carolina	4.2 (1.2) ^
New Mexico	3.9 (1.3) ^
Wisconsin †	3.3 (1.4) °
Arizona	3.2 (1.7)
Maryland	3.0 (1.4) °
Iowa †	3.0 (1.2) °
California †	2.8 (2.9)
Texas	2.7 (2.1)
West Virginia	2.7 (1.0) °
Missouri	2.4 (1.2)
Rhode Island	2.2 (1.2)
Alabama	2.1 (1.0) °
District of Columbia	1.8 (1.5)
Georgia	1.5 (1.0)
Virginia	1.4 (1.2)
New York †	1.1 (1.3)
Delaware	0.7 (1.1)
Massachusetts †	0.6 (1.4)
Montana †	0.5 (0.9)
Utah	0.1 (1.0)
Washington	0.1 (1.1)
Wyoming	0.0 (0.8)
Hawaii	-0.2 (0.9)
Colorado	-0.3 (1.3)
DoDDS	-0.5 (0.7)
Minnesota †	-0.6 (0.8)
New Hampshire †	-0.9 (1.1)
Arkansas	-1.0 (0.9)
Florida	-1.3 (1.6)
Mississippi	-1.7 (0.8) °
Tennessee	-1.9 (1.0)
Maine	-1.9 (1.4)

Standard errors of the differences appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

A/a = Significantly different from the original sample. A= Significance level is adjusted for multiple comparisons across jurisdictions. a= Pairwise significance test not adjusted for multiple comparisons.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and1998 Reading Assessments.

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Table B.13 — Data for Figure 2.15 Changes in state reading exclusion percentages from 1994 to 1998 (with accommodations), grade 4: 1998

The Nation's Report Card NAEP

	Percentage excluded in 1998 minus percentage excluded in 1994
Kentucky	3.5 (1.0) A
Arizona	3.4 (1.7)
Alabama	3.0 (1.2) a
California †	1.9 (2.3)
New Mexico	1.8 (1.4)
Texas	1.8 (1.9)
Connecticut	1.7 (1.6)
West Virginia	1.6 (1.0)
Missouri	1.5 (1.0)
North Carolina	1.4 (0.9)
Rhode Island	1.3 (1.5)
Utah	1.1 (1.3)
Louisiana	1.1 (1.2)
South Carolina	1.0 (1.2)
Wisconsin †	1.0 (1.2)
Iowa †	0.6 (1.1)
District of Columbia	0.0 (1.0)
Washington	–0.1 (1.2)
Hawaii	–0.2 (0.8)
New York †	–0.4 (1.4)
Virginia	–0.6 (1.1)
Georgia	–0.7 (1.0)
Montana †	–1.0 (0.9)
Wyoming	–1.1 (0.8)
Minnesota †	–1.1 (0.7)
Arkansas	–1.2 (1.1)
Maryland	–1.5 (1.1)
DoDDS	–1.6 (0.7) a
Mississippi	–1.7 (0.7) a
Colorado	–1.7 (1.1)
Maine	–2.5 (1.1) a
Tennessee	–2.5 (1.0) a
New Hampshire †	–2.6 (1.0) a
Massachusetts †	–2.7 (1.3)
Florida	–4.7 (1.3) A
Delaware	–4.8 (0.4) A

Standard errors of the differences appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

A/a = Significantly different from the original sample. A= Significance level is adjusted for multiple comparisons across jurisdictions. a= Pairwise significance test not adjusted for multiple comparisons.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 1998 Reading Assessments.

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Table B.14 — Data for Figure 2.16 Changes in average state reading scores from 1994 to 1998 (with and without accommodations), grade 4: 1998

The Nation's Report Card NAEP

	Accommodations not permitted (1998 minus 1994)	Accommodations permitted (1998 minus 1994)
Connecticut	9.2 (2.5) A	7.6 (2.3) A
Colorado	8.2 (1.9) A	6.8 (1.9) A
Louisiana	7.5 (2.0) A	3.6 (2.1) a
South Carolina	7.0 (1.9) A	5.4 (2.0) a
Kentucky	6.0 (2.2) A	5.9 (2.2) a
DoDDS	5.8 (1.4) A	3.5 (1.3) a
Delaware	5.6 (1.7) A	0.7 (2.0) a
Maryland	5.3 (2.2) a	2.0 (2.2) a
California †	5.1 (3.7)	5.7 (3.1)
Virginia	4.9 (2.0) a	3.8 (1.9) a
Texas	4.5 (2.8)	1.8 (2.7)
Washington	4.2 (2.0) a	5.5 (2.0) a
New York †	4.0 (2.2)	3.7 (2.1)
Montana †	3.8 (2.2)	2.[illegible] (2.1)
Minnesota †	3.5 (2.0)	0.9 (2.1)
West Virginia	3.3 (1.8)	2.5 (2.0)
District of Columbia	3.1 (1.6)	0.7 (1.5)
Georgia	3.0 (2.9)	1.7 (2.8)
Alabama	3.0 (2.3)	3.4 (2.4)
Mississippi	2.8 (2.2)	1.7 (2.1)
North Carolina	2.5 (2.0)	–1.5 (2.2)
Florida	2.4 (2.3)	0.9 (2.3)
New Hampshire †	2.2 (2.0)	2.7 (2.3)
Massachusetts †	2.1 (1.9)	–0.3 (1.9)
New Mexico	1.4 (2.7)	0.3 (2.2)
Arizona	0.3 (2.7)	0.2 (2.3)
Arkansas	0.2 (2.3)	0.1 (2.4)
Iowa †	0.2 (1.8)	–2.7 (2.1)
Wisconsin †	0.2 (1.6)	–1.8 (1.6)
Tennessee	–0.1 (2.3)	–0.7 (2.2)
Missouri	–0.7 (2.2)	–1.3 (2.0)
Hawaii	–1.2 (2.4)	–1.2 (2.3)
Rhode Island	–1.9 (2.2)	–2.1 (1.9)
Utah	–1.9 (1.8)	–1.1 (1.7)
Wyoming	–2.2 (2.0)	–3.0 (2.0)
Maine	–3.0 (1.8)	–3.6 (1.9)

Standard errors of the differences appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

A/a = Significantly different from the original sample. A= Significance level is adjusted for multiple comparisons across jurisdictions. a= Pairwise significance test not adjusted for multiple comparisons.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and1998 Reading Assessments.

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Table B.15 — Data for Table 2.5 National percentage of students at or above the reading achievement levels when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998

	1998			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	*Advanced*
Grade 4				
Accommodations not permitted	38 (0.9)	62 (0.9)	31 (0.9)	7 (0.5)
Accommodations permitted	39 (1.0)	61 (1.0)	31 (0.9)	8 (0.5)
Grade 8				
Accommodations not permitted	26 (0.9)	74 (0.9)	33 (0.9)	3 (0.4)
Accommodations permitted	27 (0.8)	73 (0.8)	32 (1.1)	3 (0.3)
Grade 12				
Accommodations not permitted	23 (0.9)	77 (0.9)	40 (0.9)	6 (0.4)
Accommodations permitted	24 (0.7)	76 (0.7)	40 (0.7)	6 (0.4)

Standard errors of the estimated percentages appear in parentheses.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.16 — Data for Figure 2.17 National percentage of students within each reading achievement-level range, when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998

	1998			
	Below Basic	At Basic	At Proficient	At Advanced
Grade 4				
Accommodations not permitted	38 (0.9)	32 (0.7)	24 (0.7)	7 (0.5)
Accommodations permitted	39 (1.0)	31 (0.8)	23 (0.8)	8 (0.5)
Grade 8				
Accommodations not permitted	26 (0.9)	41 (0.8)	31 (0.9)	3 (0.4)
Accommodations permitted	27 (0.8)	41 (0.9)	30 (0.9)	3 (0.3)
Grade 12				
Accommodations not permitted	23 (0.9)	37 (0.8)	35 (1.0)	6 (0.4)
Accommodations permitted	24 (0.7)	36 (0.6)	35 (0.8)	6 (0.4)

Standard errors of the estimated percentages appear in parentheses.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table B.17 — Data for Table 2.6 Percentage of students at or above each reading achievement-level range for the states when accommodations were not permitted and when accommodations were permitted, grade 4: 1998

The Nation's Report Card NAEP

	Accommodations not permitted				Accommodations permitted			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	*Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	*Advanced*
Alabama	44 (2.1)	56 (2.1)	24 (1.9)	5 (0.8)	44 (2.3)	56 (2.3)	24 (2.0)	4 (0.7)
Arizona	47 (1.7)	53 (1.7)	22 (1.4)	5 (0.5)	49 (1.4)	51 (1.4)	22 (1.3)	4 (0.5)
Arkansas	45 (1.9)	55 (1.9)	23 (1.6)	4 (0.6)	46 (1.8)	54 (1.8)	23 (1.6)	4 (0.6)
California †	52 (2.8)	48 (2.8)	20 (1.9)	4 (0.9)	52 (2.6)	48 (2.6)	20 (2.4)	4 (0.8)
Colorado	31 (1.6)	69 (1.6)	34 (1.8)	7 (0.8)	33 (1.5)	67 (1.5)	33 (1.7)	6 (0.7)
Connecticut	22 (1.7)	78 (1.7)	46 (2.4)	11 (1.7)	24 (1.7)	76 (1.7)	43 (2.2)	11 (1.0)
Delaware	43 (1.5)	57 (1.5)	25 (1.2)	5 (0.6)	47 (1.5)	53 (1.5)	22 (1.4)	5 (0.6)
Florida	46 (1.6)	54 (1.6)	23 (1.2)	5 (0.7)	47 (1.6)	53 (1.6)	22 (1.2)	4 (0.5)
Georgia	45 (1.8)	55 (1.8)	24 (1.8)	5 (0.7)	46 (1.7)	54 (1.7)	24 (1.4)	5 (0.8)
Hawaii	55 (1.8)	45 (1.8)	17 (1.0)	3 (0.6)	55 (1.7)	45 (1.7)	17 (1.3)	3 (0.6)
Iowa †	30 (1.8)	70 (1.8)	35 (1.6)	7 (0.7)	33 (1.6)	67 (1.6)	33 (1.7)	7 (1.0)
Kansas †	29 (1.7)	71 (1.7)	34 (1.9)	6 (0.8)	30 (1.7)	70 (1.7)	34 (2.0)	7 (0.9)
Kentucky	37 (1.8)	63 (1.8)	29 (1.7)	6 (0.7)	38 (1.7)	62 (1.7)	29 (1.8)	6 (0.9)
Louisiana	52 (1.6)	48 (1.6)	19 (1.4)	3 (0.5)	56 (1.8)	44 (1.8)	17 (1.2)	3 (0.5)
Maine	27 (1.5)	73 (1.5)	36 (1.7)	8 (0.8)	28 (1.7)	72 (1.7)	35 (2.0)	7 (1.0)
Maryland	39 (2.0)	61 (2.0)	29 (1.9)	7 (0.9)	42 (1.9)	58 (1.9)	27 (1.6)	6 (1.0)
Massachusetts †	27 (1.8)	73 (1.8)	37 (2.0)	8 (0.8)	30 (1.9)	70 (1.9)	35 (1.9)	8 (0.7)
Michigan	37 (2.2)	63 (2.2)	28 (1.6)	5 (0.6)	38 (1.8)	62 (1.8)	28 (1.7)	5 (0.7)
Minnesota †	31 (1.6)	69 (1.6)	36 (1.6)	8 (0.9)	33 (1.6)	67 (1.6)	35 (1.9)	8 (0.7)
Mississippi	52 (1.8)	48 (1.8)	18 (1.2)	3 (0.5)	53 (1.7)	47 (1.7)	17 (1.0)	3 (0.4)
Missouri	37 (1.9)	63 (1.9)	29 (1.6)	5 (0.8)	39 (1.7)	61 (1.7)	28 (1.4)	5 (0.7)
Montana †	27 (1.8)	73 (1.8)	37 (2.4)	8 (1.2)	28 (2.0)	72 (2.0)	37 (2.0)	8 (1.0)
Nevada	47 (1.7)	53 (1.7)	21 (1.3)	4 (0.6)	49 (2.0)	51 (2.0)	20 (1.5)	4 (0.5)
New Hampshire †	25 (1.6)	75 (1.6)	38 (1.7)	7 (0.6)	26 (1.8)	74 (1.8)	37 (2.4)	8 (1.0)
New Mexico	48 (2.0)	52 (2.0)	22 (1.5)	4 (0.9)	49 (1.4)	51 (1.4)	21 (1.2)	4 (0.7)
New York †	38 (2.2)	62 (2.2)	29 (1.7)	5 (0.7)	38 (2.0)	62 (2.0)	29 (1.6)	6 (0.7)
North Carolina	38 (1.6)	62 (1.6)	28 (1.4)	6 (0.7)	42 (1.8)	58 (1.8)	27 (1.5)	6 (0.6)
Oklahoma	34 (1.3)	66 (1.3)	30 (1.6)	5 (0.7)	34 (1.5)	66 (1.5)	30 (1.3)	5 (0.6)
Oregon	39 (2.0)	61 (2.0)	28 (1.5)	5 (0.7)	42 (2.2)	58 (2.2)	26 (1.6)	5 (0.6)
Rhode Island	35 (1.7)	65 (1.7)	32 (1.7)	7 (0.9)	36 (1.5)	64 (1.5)	31 (1.7)	7 (1.0)
South Carolina	45 (1.8)	55 (1.8)	22 (1.2)	4 (0.6)	47 (1.7)	53 (1.7)	22 (1.2)	4 (0.6)
Tennessee	42 (2.0)	58 (2.0)	25 (1.4)	5 (0.6)	43 (1.9)	57 (1.9)	25 (1.5)	4 (0.6)
Texas	37 (2.4)	63 (2.4)	29 (2.1)	5 (0.9)	41 (2.2)	59 (2.2)	28 (2.1)	6 (0.9)
Utah	38 (1.7)	62 (1.7)	28 (1.6)	5 (0.8)	38 (1.7)	62 (1.7)	28 (1.4)	5 (0.5)
Virginia	36 (1.5)	64 (1.5)	30 (1.6)	6 (0.8)	38 (1.5)	62 (1.5)	30 (1.7)	6 (0.9)
Washington	37 (1.7)	63 (1.7)	29 (1.4)	6 (0.8)	36 (1.8)	64 (1.8)	30 (1.5)	6 (0.8)
West Virginia	38 (1.7)	62 (1.7)	29 (1.6)	6 (1.0)	40 (1.8)	60 (1.8)	28 (2.1)	5 (1.0)
Wisconsin †	28 (1.6)	72 (1.6)	34 (1.6)	6 (0.8)	31 (1.5)	69 (1.5)	34 (1.9)	6 (0.8)
Wyoming	35 (2.1)	65 (2.1)	30 (2.0)	6 (0.7)	36 (2.0)	64 (2.0)	29 (1.5)	6 (0.7)
Other Jurisdictions								
District of Columbia	72 (1.4)	28 (1.4)	10 (1.1)	3 (0.7)	73 (1.3)	27 (1.3)	10 (0.8)	3 (0.4)
DDESS	35 (1.8)	65 (1.8)	32 (1.6)	8 (0.9)	37 (1.6)	63 (1.6)	32 (1.4)	9 (0.7)
DoDDS	30 (1.4)	70 (1.4)	34 (1.4)	8 (1.0)	33 (1.3)	67 (1.3)	33 (1.4)	7 (0.7)
Virgin Islands	74 (1.8)	26 (1.8)	8 (1.3)	2 (0.4)	76 (2.0)	24 (2.0)	7 (1.1)	2 (0.6)

Standard errors of the estimated percentages appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.18 — Data for Table 2.7 Percentage of students at or above each reading achievement-level range for the states when accommodations were not permitted and when accommodations were permitted, grade 8: 1998

	Accommodations not permitted				Accommodations permitted			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	*Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	*Advanced*
Alabama	34 (1.8)	66 (1.8)	21 (1.4)	1 (0.4)	33 (2.1)	67 (2.1)	22 (1.9)	1 (0.4)
Arizona	27 (1.5)	73 (1.5)	28 (1.3)	2 (0.4)	28 (1.5)	72 (1.5)	27 (1.4)	1 (0.3)
Arkansas	32 (1.7)	68 (1.7)	23 (1.3)	1 (0.4)	32 (1.4)	68 (1.4)	23 (1.4)	1 (0.3)
California †	36 (2.4)	64 (2.4)	22 (1.7)	1 (0.3)	37 (2.0)	63 (2.0)	21 (1.9)	1 (0.2)
Colorado	24 (1.4)	76 (1.4)	30 (1.5)	2 (0.3)	23 (1.2)	77 (1.2)	30 (1.4)	2 (0.4)
Connecticut	18 (1.3)	82 (1.3)	42 (1.5)	4 (0.5)	19 (1.4)	81 (1.4)	40 (1.6)	3 (0.6)
Delaware	34 (1.5)	66 (1.5)	25 (1.5)	2 (0.4)	36 (2.0)	64 (2.0)	23 (1.4)	2 (0.6)
Florida	35 (2.0)	65 (2.0)	23 (1.6)	1 (0.3)	33 (1.8)	67 (1.8)	23 (1.7)	1 (0.2)
Georgia	32 (1.7)	68 (1.7)	25 (1.6)	1 (0.5)	32 (1.7)	68 (1.7)	25 (1.4)	1 (0.3)
Hawaii	40 (1.5)	60 (1.5)	19 (1.0)	1 (0.3)	41 (1.3)	59 (1.3)	19 (1.2)	1 (0.3)
Kansas †	19 (1.7)	81 (1.7)	35 (1.7)	2 (0.6)	19 (1.6)	81 (1.6)	36 (1.8)	2 (0.5)
Kentucky	26 (1.6)	74 (1.6)	29 (1.7)	2 (0.5)	26 (1.7)	74 (1.7)	30 (1.8)	2 (0.5)
Louisiana	36 (1.9)	64 (1.9)	18 (1.4)	1 (0.2)	37 (1.9)	63 (1.9)	17 (1.5)	1 (0.3)
Maine	16 (1.3)	84 (1.3)	42 (1.7)	4 (0.7)	17 (1.4)	83 (1.4)	41 (1.9)	4 (0.5)
Maryland †	28 (1.8)	72 (1.8)	31 (2.0)	4 (0.7)	30 (1.9)	70 (1.9)	31 (2.1)	3 (0.7)
Massachusetts	20 (1.5)	80 (1.5)	36 (2.2)	3 (0.7)	21 (1.3)	79 (1.3)	38 (1.7)	3 (0.8)
Minnesota †	19 (1.7)	81 (1.7)	37 (1.9)	2 (0.5)	22 (1.4)	78 (1.4)	36 (1.7)	2 (0.5)
Mississippi	39 (2.0)	61 (2.0)	19 (1.2)	1 (0.2)	38 (1.7)	62 (1.7)	19 (1.2)	1 (0.2)
Missouri	24 (1.8)	76 (1.8)	29 (1.5)	1 (0.3)	25 (1.8)	75 (1.8)	28 (1.6)	1 (0.2)
Montana †	17 (1.5)	83 (1.5)	38 (1.4)	2 (0.6)	17 (1.6)	83 (1.6)	40 (1.5)	3 (0.8)
Nevada	31 (1.5)	69 (1.5)	24 (1.3)	1 (0.3)	30 (1.3)	70 (1.3)	23 (1.2)	1 (0.5)
New Mexico	30 (1.7)	70 (1.7)	24 (1.4)	1 (0.4)	29 (1.7)	71 (1.7)	23 (1.3)	1 (0.3)
New York †	22 (1.7)	78 (1.7)	34 (2.3)	2 (0.7)	24 (1.7)	76 (1.7)	32 (1.9)	2 (0.5)
North Carolina	24 (1.1)	76 (1.1)	31 (1.5)	2 (0.3)	26 (1.2)	74 (1.2)	30 (1.4)	2 (0.4)
Oklahoma	20 (1.5)	80 (1.5)	29 (1.7)	1 (0.4)	20 (1.2)	80 (1.2)	30 (1.9)	1 (0.3)
Oregon	22 (1.7)	78 (1.7)	33 (2.0)	2 (0.6)	22 (1.4)	78 (1.4)	35 (2.1)	3 (0.6)
Rhode Island	26 (1.2)	74 (1.2)	30 (1.2)	2 (0.5)	24 (1.4)	76 (1.4)	32 (1.2)	3 (0.4)
South Carolina	35 (1.8)	65 (1.8)	22 (1.1)	1 (0.3)	34 (1.6)	66 (1.6)	22 (1.0)	1 (0.2)
Tennessee	29 (1.4)	71 (1.4)	26 (1.6)	1 (0.4)	29 (1.5)	71 (1.5)	27 (1.6)	1 (0.3)
Texas	24 (1.7)	76 (1.7)	28 (1.9)	1 (0.4)	26 (1.7)	74 (1.7)	27 (1.6)	1 (0.4)
Utah	23 (1.5)	77 (1.5)	31 (1.2)	2 (0.3)	23 (1.2)	77 (1.2)	31 (1.6)	1 (0.3)
Virginia	22 (1.2)	78 (1.2)	33 (1.6)	3 (0.6)	22 (1.2)	78 (1.2)	33 (1.3)	3 (0.6)
Washington	23 (1.3)	77 (1.3)	32 (1.6)	2 (0.5)	24 (1.5)	76 (1.5)	32 (1.7)	2 (0.5)
West Virginia	26 (1.6)	74 (1.6)	27 (1.2)	1 (0.3)	25 (1.2)	75 (1.2)	28 (1.1)	1 (0.3)
Wisconsin †	21 (1.8)	79 (1.8)	33 (2.0)	2 (0.4)	22 (2.2)	78 (2.2)	34 (1.8)	2 (0.6)
Wyoming	24 (1.4)	76 (1.4)	29 (1.5)	2 (0.4)	24 (1.8)	76 (1.8)	31 (1.5)	2 (0.5)
Other Jurisdictions								
District of Columbia	56 (2.4)	44 (2.4)	12 (1.3)	1 (0.4)	56 (2.4)	44 (2.4)	11 (1.0)	1 (0.5)
DDESS	22 (4.2)	78 (4.2)	37 (3.3)	6 (1.1)	22 (3.9)	78 (3.9)	39 (4.5)	6 (1.5)
DoDDS	20 (1.2)	80 (1.2)	36 (2.2)	3 (0.5)	20 (1.3)	80 (1.3)	37 (1.6)	4 (0.7)
Virgin Islands	60 (3.7)	40 (3.7)	10 (2.5)	1 (***)	61 (2.2)	39 (2.2)	9 (1.9)	# (***)

Standard errors of the estimated percentages appear in parentheses.

(***) Standard error estimates cannot be accurately determined.

Percentage is between 0.0 and 0.5.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.19 — Data for Table 3.1 National average reading scores by gender when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998

	Male		Female	
	Without accommodations	With accommodations	Without accommodations	With accommodations
Grade 4	214 (1.1)	214 (1.2)	220 (0.7)	219 (1.1)
Grade 8	257 (0.9)	256 (1.0)	270 (0.9)	270 (0.8)
Grade 12	283 (1.0)	282 (0.8)	298 (0.7)	298 (0.8)

Standard errors of the average scores appear in parentheses.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.20 — Data for Table 3.2 State average reading scores by gender for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 4: 1998

The Nation's Report Card NAEP

	Male		Female	
	Without accommodations	With accommodations	Without accommodations	With accommodations
Alabama	208 (1.8)	209 (2.0)	214 (2.1)	214 (2.0)
Arizona	201 (2.2)	202 (2.0)	212 (2.3)	211 (1.6)
Arkansas	206 (1.8)	205 (2.0)	212 (1.7)	213 (1.7)
California †	198 (3.6)	198 (2.7)	206 (3.3)	206 (2.6)
Colorado	218 (1.7)	217 (1.7)	225 (1.5)	224 (1.5)
Connecticut	229 (2.0)	225 (1.9)a	234 (2.0)	235 (1.6)
Delaware	208 (1.5)	204 (2.2)	216 (1.9)	210 (1.6)a
Florida	203 (1.9)	201 (1.8)	212 (1.7)	210 (1.6)
Georgia	206 (1.9)	205 (1.8)	213 (1.7)	212 (1.5)
Hawaii	194 (2.5)	193 (2.0)	205 (1.8)	206 (2.0)
Iowa †	218 (1.5)	216 (1.8)	228 (1.4)	225 (2.0)
Kansas †	219 (1.6)	218 (1.5)	226 (1.6)	225 (2.0)
Kentucky	216 (1.8)	216 (1.7)	220 (1.6)	219 (1.6)
Louisiana	199 (1.8)	195 (2.1)a	209 (1.6)	205 (1.9)a
Maine	222 (1.4)	222 (1.5)	229 (1.5)	228 (1.6)
Maryland	209 (2.0)	206 (2.1)	221 (1.6)	217 (1.7)a
Massachusetts †	221 (1.6)	219 (1.3)	229 (1.7)	226 (1.6)a
Michigan	212 (1.9)	211 (1.9)	221 (1.8)	221 (1.5)
Minnesota †	218 (1.9)	215 (1.7)	226 (1.5)	223 (2.0)a
Mississippi	201 (1.8)	199 (1.8)	208 (1.5)	207 (1.5)
Missouri	211 (2.0)	210 (1.7)	222 (1.6)	221 (1.4)
Montana †	221 (2.0)	220 (1.8)	231 (2.7)	230 (1.7)
Nevada	204 (1.6)	203 (2.0)	211 (1.9)	209 (2.1)
New Hampshire †	222 (1.8)	224 (1.9)	229 (1.5)	228 (2.1)
New Mexico	202 (2.0)	201 (2.2)	209 (2.6)	209 (1.7)
New York †	214 (1.7)	214 (1.6)	218 (2.0)	217 (2.0)
North Carolina	213 (1.7)	208 (1.9)a	220 (1.7)	218 (1.9)
Oklahoma	219 (1.2)	218 (1.4)	220 (1.5)	220 (1.6)
Oregon	210 (1.8)	208 (2.2)	218 (1.9)	215 (2.1)
Rhode Island	217 (2.3)	218 (1.6)	220 (2.3)	217 (1.8)
South Carolina	207 (1.5)	206 (1.8)	214 (1.6)	212 (1.8)
Tennessee	209 (1.7)	208 (1.7)	216 (1.8)	215 (1.5)
Texas	213 (2.3)	208 (2.1)a	221 (2.1)	220 (2.0)
Utah	212 (1.8)	213 (1.5)	219 (1.5)	219 (1.5)
Virginia	214 (1.8)	213 (1.5)	223 (1.4)	222 (1.5)
Washington	212 (1.5)	213 (1.8)	222 (1.6)	223 (1.5)
West Virginia	213 (1.8)	212 (1.9)	219 (1.8)	219 (1.9)
Wisconsin †	222 (1.8)	221 (1.5)	226 (1.3)	224 (1.1)
Wyoming	216 (2.0)	215 (1.6)	223 (1.8)	222 (1.9)
Other Jurisdictions				
District of Columbia	177 (1.8)	175 (1.7)	186 (2.1)	183 (2.0)
DDESS	217 (1.5)	214 (3.1)	223 (1.5)	223 (1.3)
DoDDS	219 (1.4)	217 (1.2)	228 (1.3)	226 (1.5)
Virgin Islands	169 (5.0)	166 (3.5)	186 (2.1)	182 (2.3)

Standard errors of the average scores appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

a Indicates significantly different from original sample.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table B.21 — Data for Table 3.3 State average reading scores by gender for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 8: 1998

The Nation's Report Card NAEP

	Male		Female	
	Without accommodations	With accommodations	Without accommodations	With accommodations
Alabama	251 (1.5)	250 (1.6)	259 (1.4)	261 (1.7)
Arizona	256 (1.5)	255 (1.4)	266 (1.3)	265 (1.4)
Arkansas	250 (1.7)	251 (1.4)	262 (1.6)	262 (1.5)
California †	249 (1.7)	249 (1.6)	257 (2.1)	255 (2.1)
Colorado	257 (1.2)	258 (1.0)	270 (1.4)	270 (1.4)
Connecticut	265 (1.4)	265 (1.2)	278 (1.3)	277 (1.5)
Delaware	249 (1.9)	248 (1.7)	262 (1.6)	260 (2.1)
Florida	247 (2.1)	248 (1.9)	260 (1.8)	261 (1.3)
Georgia	252 (1.7)	252 (1.5)	262 (1.5)	262 (1.6)
Hawaii	243 (1.7)	242 (1.5)	256 (1.4)	256 (1.1)
Kansas †	263 (1.4)	262 (1.9)	273 (1.5)	273 (1.7)
Kentucky	255 (1.9)	256 (1.7)	269 (1.5)	269 (1.8)
Louisiana	245 (2.0)	245 (1.8)	258 (1.3)	258 (1.3)
Maine	265 (1.7)	264 (1.7)	280 (1.5)	279 (1.3)
Maryland †	255 (2.1)	255 (2.3)	269 (2.0)	267 (1.9)
Massachusetts	263 (1.9)	264 (1.7)	274 (1.7)	274 (1.6)
Minnesota †	260 (1.6)	258 (1.6)	275 (1.4)	273 (1.7)
Mississippi	245 (1.9)	247 (1.6)	256 (1.4)	256 (1.3)
Missouri	258 (1.7)	257 (1.8)	269 (1.2)	268 (1.2)
Montana †	263 (1.7)	264 (2.1)	277 (1.7)	277 (1.4)
Nevada	252 (1.4)	253 (1.3)	262 (1.4)	263 (1.3)
New Mexico	252 (1.5)	253 (1.5)	263 (1.5)	263 (1.2)
New York †	263 (1.7)	261 (1.6)	270 (1.7)	269 (1.7)
North Carolina	256 (1.5)	255 (1.4)	270 (1.2)	269 (1.2)
Oklahoma	259 (1.8)	259 (1.4)	271 (1.3)	271 (1.3)
Oregon	259 (1.8)	258 (1.7)	273 (1.5)	275 (1.6)
Rhode Island	257 (1.7)	259 (1.2)	268 (1.1)	269 (1.4)
South Carolina	250 (1.6)	250 (1.9)	259 (1.5)	259 (1.3)
Tennessee	252 (1.6)	250 (1.7)	265 (1.5)	265 (1.5)
Texas	257 (1.6)	256 (1.6)	267 (1.7)	266 (1.6)
Utah	260 (1.2)	259 (1.4)	269 (1.2)	268 (1.4)
Virginia	262 (1.3)	262 (1.2)	271 (1.4)	271 (1.4)
Washington	258 (1.6)	256 (1.5)	272 (1.4)	272 (1.3)
West Virginia	254 (1.8)	255 (1.5)	269 (1.1)	268 (1.1)
Wisconsin †	259 (1.9)	258 (2.2)	273 (1.6)	273 (1.8)
Wyoming	255 (1.5)	256 (2.1)	270 (1.7)	271 (1.0)
Other Jurisdictions				
District of Columbia	230 (3.1)	229 (3.4)	242 (2.1)	241 (1.9)
DDESS	268 (5.7)	266 (5.9)	270 (3.3)	271 (3.4)
DoDDS	265 (1.5)	264 (1.2)	274 (1.3)	274 (1.7)
Virgin Islands	229 (3.2)	227 (3.4)	236 (3.4)	235 (2.8)

Standard errors of the average scores appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.22 — Data for Table 3.4 National average reading scores by race/ethnicity, when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998

The Nation's Report Card NAEP

	White		Black		Hispanic		Asian/ Pacific Islander		American Indian	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Grade 4	227 (0.8)	226 (1.0)	194 (1.7)	194 (1.8)	196 (1.8)	193 (2.6)	225 (2.7)	220 (3.8)	202 (3.2)	199 (3.0)
Grade 8	272 (0.9)	271 (0.9)	243 (1.5)	244 (1.1)	244 (2.1)	243 (1.5)	271 (3.7)	270 (4.2)	248 (4.7)!	246 (4.2)!
Grade 12	298 (0.7)	298 (0.7)	270 (1.7)	268 (1.4)	275 (1.5)	274 (1.7)	289 (3.3)	288 (2.3)	276 (5.4)!	276 (5.7)!

Standard errors of the average scores appear in parentheses.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.23 — Data for Table 3.5 State average reading scores by race/ethnicity for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 4: 1998

The Nation's Report Card NAEP

	White		Black		Hispanic		Asian/ Pacific Islander		American Indian	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Nation	225 (0.9)	225 (1.0)	193 (1.8)	193 (2.0)	195 (1.9)	191 (2.6)	222 (2.8)	217 (4.1)	200 (3.2)	197 (2.9)
Alabama	222 (2.0)	223 (1.9)	193 (2.0)	192 (2.4)	190 (4.5)	191 (3.6)	*** (***)	*** (***)	*** (***)	*** (***)
Arizona	220 (1.4)	220 (1.5)	190 (3.8)	192 (4.0)	186 (3.7)	189 (2.3)	*** (***)	*** (***)	202 (4.3)	186 (8.2)
Arkansas	218 (1.3)	217 (1.6)	186 (2.4)	186 (2.6)	187 (5.3)	189 (6.0)	*** (***)	*** (***)	*** (***)	*** (***)
California †	217 (2.6)	217 (2.2)	189 (4.6)	185 (4.0)	181 (5.2)	185 (3.8)	215 (5.1)	215 (5.0)	*** (***)	*** (***)
Colorado	229 (1.3)	227 (1.4)	202 (4.4)	199 (5.1)	202 (2.1)	202 (2.2)	228 (6.8)	*** (***)	*** (***)	*** (***)
Connecticut	240 (1.7)	238 (1.2)	205 (3.1)	205 (3.5)	205 (3.9)	203 (3.8)	244 (4.3)	240 (3.9)	*** (***)	*** (***)
Delaware	220 (1.5)	219 (1.6)	199 (1.9)	189 (3.2)a	193 (3.8)	184 (7.5)	*** (***)	*** (***)	*** (***)	*** (***)
Florida	219 (1.8)	218 (1.6)	189 (2.2)	186 (2.3)	200 (3.0)	197 (3.6)	*** (***)	*** (***)	*** (***)	*** (***)
Georgia	225 (2.0)	222 (1.6)	193 (2.0)	192 (1.6)	193 (4.2)	191 (3.8)	*** (***)	*** (***)	*** (***)	*** (***)
Hawaii	211 (2.3)	213 (2.5)	195 (4.6)	192 (5.6)	183 (3.5)	185 (3.7)	201 (2.3)	200 (1.8)	183 (5.6)	*** (***)
Iowa †	226 (1.2)	223 (1.7)	192 (4.1)	189 (4.7)	210 (2.7)	205 (3.6)	*** (***)	*** (***)	*** (***)	*** (***)
Kansas †	228 (1.5)	227 (1.5)	198 (3.7)	201 (5.1)	207 (3.7)	204 (5.2)	*** (***)	*** (***)	214 (5.3)	218 (5.2)
Kentucky	221 (1.5)	220 (1.4)	196 (3.0)	196 (3.7)	195 (5.1)	197 (5.3)	*** (***)	*** (***)	*** (***)	*** (***)
Louisiana	222 (1.3)	219 (1.3)a	186 (2.0)	181 (2.0)a	184 (4.1)	179 (4.0)	*** (***)	*** (***)	*** (***)	*** (***)
Maine	227 (1.2)	226 (1.3)	*** (***)	*** (***)	208 (6.2)	207 (5.4)	*** (***)	*** (***)	*** (***)	*** (***)
Maryland	229 (1.7)	225 (1.8)a	195 (2.4)	193 (2.1)	200 (4.1)	198 (3.6)	230 (5.4)	230 (4.2)	*** (***)	*** (***)
Massachusetts †	231 (1.3)	229 (1.3)	202 (3.2)	202 (2.8)	200 (3.3)	199 (2.5)	216 (5.5)	216 (5.2)	*** (***)	*** (***)
Michigan	225 (1.3)	224 (1.1)	191 (3.9)	191 (3.0)	193 (4.8)	192 (5.5)	*** (***)	*** (***)	*** (***)	*** (***)
Minnesota †	226 (1.5)	224 (1.6)	190 (4.7)!	187 (6.9)!	203 (5.6)	198 (4.3)	216 (10.1)	203 (10.7)	*** (***)	*** (***)
Mississippi	217 (1.8)	217 (1.4)	192 (1.9)	191 (1.7)	183 (3.4)	179 (4.0)	*** (***)	*** (***)	*** (***)	*** (***)
Missouri	223 (1.4)	223 (1.3)	190 (3.6)	191 (3.0)	196 (4.5)	190 (4.2)	*** (***)	*** (***)	*** (***)	*** (***)
Montana †	230 (1.6)	229 (1.5)	*** (***)	*** (***)	207 (6.2)	213 (4.6)	*** (***)	*** (***)	209 (3.9)	200 (5.2)
Nevada	215 (1.4)	214 (1.7)	189 (3.1)	185 (4.9)	195 (2.0)	191 (2.9)	216 (3.6)	215 (3.2)	199 (5.8)	196 (5.6)
New Hampshire †	227 (1.3)	228 (1.7)	*** (***)	*** (***)	201 (5.2)	208 (5.9)	*** (***)	*** (***)	*** (***)	*** (***)
New Mexico	222 (1.8)	221 (1.8)	183 (7.1)	188 (5.8)	199 (1.7)	195 (1.8)	*** (***)	*** (***)	181 (8.6)	188 (3.6)
New York †	227 (1.2)	228 (1.2)	193 (2.8)	191 (3.1)	194 (2.5)	192 (3.4)	234 (5.2)	235 (7.0)	*** (***)	*** (***)
North Carolina	227 (1.4)	223 (1.4)a	200 (2.0)	195 (2.5)a	196 (3.2)	191 (4.3)	*** (***)	*** (***)	*** (***)	*** (***)
Oklahoma	225 (1.1)	225 (1.1)	192 (5.0)	194 (4.9)	207 (2.5)	206 (2.9)	*** (***)	*** (***)	214 (2.4)	211 (3.3)
Oregon	220 (1.6)	218 (1.7)	202 (5.2)	191 (7.9)	191 (3.4)	185 (3.6)	215 (5.3)	211 (5.5)	197 (4.1)	197 (4.5)
Rhode Island	227 (1.4)	227 (1.3)	197 (3.6)	193 (6.3)	185 (5.1)	186 (4.2)	211 (6.4)	209 (5.6)	*** (***)	*** (***)
South Carolina	223 (1.5)	221 (1.5)	197 (1.7)	195 (2.1)	189 (3.9)	189 (4.7)	*** (***)	*** (***)	*** (***)	*** (***)
Tennessee	220 (1.6)	218 (1.5)	193 (2.4)	194 (2.5)	193 (6.1)	197 (6.3)	*** (***)	*** (***)	*** (***)	*** (***)
Texas	232 (1.9)	231 (1.9)	197 (3.5)	191 (3.0)a	204 (2.7)	201 (1.8)	*** (***)	*** (***)	*** (***)	*** (***)
Utah	222 (1.2)	222 (1.1)	*** (***)	*** (***)	189 (3.0)	191 (3.0)	208 (6.5)	213 (6.1)	190 (7.2)	192 (6.5)
Virginia	226 (1.5)	227 (1.5)	203 (1.8)	200 (1.7)	198 (4.2)	197 (4.0)	230 (4.3)	225 (4.9)	*** (***)	*** (***)
Washington	221 (1.4)	222 (1.4)	198 (4.4)	201 (3.9)	195 (3.4)	200 (3.4)	220 (3.2)	220 (3.2)	208 (4.5)	211 (4.3)
West Virginia	219 (1.4)	218 (1.7)	192 (3.0)!	195 (3.3)!	196 (5.1)	197 (3.5)	*** (***)	*** (***)	*** (***)	*** (***)
Wisconsin †	230 (1.1)	229 (1.2)	193 (3.5)	187 (4.0)	208 (2.7)	202 (2.7)	*** (***)	*** (***)	*** (***)	*** (***)
Wyoming	222 (1.9)	222 (1.4)	*** (***)	*** (***)	207 (3.2)	202 (3.4)	*** (***)	*** (***)	205 (6.9)	202 (5.4)
Other Jurisdictions										
District of Columbia	231 (5.9)	235 (4.9)	180 (1.6)	177 (1.1)	168 (4.3)	165 (4.3)	*** (***)	*** (***)	*** (***)	*** (***)
DDESS	230 (2.3)	228 (1.7)	209 (1.9)	207 (2.4)	211 (3.6)	213 (3.2)	223 (6.6)	222 (10.4)	*** (***)	*** (***)
DoDDS	229 (1.5)	228 (1.4)	212 (3.6)	211 (2.8)	216 (4.2)	209 (2.8)	227 (2.8)	226 (3.5)	219 (3.9)	215 (6.4)
Virgin Islands	*** (***)	*** (***)	181 (2.0)	176 (1.6)	168 (4.1)	164 (8.5)	*** (***)	*** (***)	*** (***)	*** (***)

Standard errors of the average scores appear in parentheses. *** (***) Sample size is insufficient to permit a reliable estimate.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999–500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

a Indicates significantly different from original sample.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table B.24 — Data for Table 3.6 State average reading scores by race/ethnicity for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 8: 1998

The Nation's Report Card NAEP

	White		Black		Hispanic		Asian/ Pacific Islander		American Indian	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Nation	270 (0.9)	269 (1.0)	241 (1.6)	242 (1.1)	243 (2.1)	241 (1.6)	269 (4.0)	268 (4.6)	248 (4.8)‡	246 (3.8)‡
Alabama	264 (1.4)	265 (1.4)	239 (1.8)	238 (2.3)	235 (5.7)	232 (5.5)	*** (***)	*** (***)	*** (***)	*** (***)
Arizona	272 (1.1)	271 (1.0)	246 (3.3)	249 (3.6)	245 (1.5)	245 (2.1)	*** (***)	*** (***)	243 (4.3)	236 (4.2)
Arkansas	263 (1.4)	263 (1.3)	235 (2.1)	236 (1.8)	230 (5.8)	231 (5.4)	*** (***)	*** (***)	*** (***)	*** (***)
California †	269 (1.9)	269 (1.8)	244 (3.6)	239 (3.2)	239 (2.0)	239 (1.5)	259 (3.2)	261 (3.5)	*** (***)	*** (***)
Colorado	272 (1.0)	271 (1.0)	241 (3.8)‡	245 (4.0)	244 (2.0)	246 (2.3)	264 (4.5)	262 (4.6)	*** (***)	*** (***)
Connecticut	279 (1.0)	277 (1.0)	242 (2.7)	244 (2.1)	250 (2.3)	247 (2.9)	281 (4.4)	274 (7.0)	*** (***)	*** (***)
Delaware	264 (1.3)	263 (1.3)	239 (2.6)	236 (2.1)	244 (5.9)	240 (5.8)	*** (***)	*** (***)	*** (***)	*** (***)
Florida	265 (1.6)	265 (1.2)	235 (2.3)	238 (2.0)	242 (3.6)	244 (3.8)	280 (3.7)	279 (3.8)	*** (***)	*** (***)
Georgia	269 (1.7)	268 (1.5)	239 (1.8)	240 (1.7)	237 (3.5)	242 (4.3)	*** (***)	269 (5.3)	*** (***)	*** (***)
Hawaii	264 (2.2)	262 (2.4)	248 (8.3)	244 (8.0)	239 (3.0)	240 (3.1)	248 (1.2)	248 (1.2)	*** (***)	*** (***)
Kansas †	272 (1.1)	272 (1.3)	253 (7.7)	250 (7.2)	248 (5.2)	246 (5.5)	*** (***)	*** (***)	*** (***)	*** (***)
Kentucky	265 (1.2)	264 (1.4)	242 (4.6)	245 (2.7)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Louisiana	264 (1.4)	263 (1.3)	237 (1.9)	237 (2.2)	230 (6.6)	233 (3.9)	*** (***)	*** (***)	*** (***)	*** (***)
Maine	274 (1.2)	273 (1.2)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Maryland †	273 (2.1)	272 (2.3)	242 (1.8)	240 (1.7)	249 (4.1)	250 (4.3)	284 (4.1)	278 (6.2)	*** (***)	*** (***)
Massachusetts	274 (1.5)	274 (1.5)	251 (3.4)	248 (3.5)	246 (3.3)	246 (3.1)	267 (5.7)	273 (3.8)	*** (***)	*** (***)
Minnesota †	272 (1.1)	270 (1.5)	233 (4.8)	228 (5.1)	234 (5.4)	233 (7.8)	248 (5.5)	244 (6.2)	*** (***)	*** (***)
Mississippi	264 (1.2)	264 (1.3)	239 (1.8)	240 (1.5)	217 (6.4)	222 (7.3)	*** (***)	*** (***)	*** (***)	*** (***)
Missouri	267 (1.3)	266 (1.4)	242 (2.7)	242 (2.3)	*** (***)	245 (5.4)	*** (***)	*** (***)	*** (***)	*** (***)
Montana †	273 (1.1)	274 (1.1)	*** (***)	*** (***)	249 (6.2)	248 (5.7)	*** (***)	*** (***)	250 (4.7)	248 (7.7)
Nevada	265 (1.0)	265 (1.0)	240 (4.8)	244 (2.6)	242 (2.4)	242 (2.1)	261 (3.2)	260 (3.4)	*** (***)	*** (***)
New Mexico	271 (1.5)	271 (1.4)	*** (***)	*** (***)	249 (1.8)	251 (1.5)	*** (***)	*** (***)	247 (4.4)	244 (4.6)
New York †	277 (1.4)	276 (1.3)	248 (2.5)	247 (2.4)	249 (2.2)	247 (2.2)	279 (6.5)‡	279 (5.0)‡	*** (***)	*** (***)
North Carolina	271 (1.3)	271 (1.2)	249 (1.6)	247 (1.6)	239 (5.9)	235 (6.6)	*** (***)	*** (***)	261 (2.6)‡	259 (2.8)‡
Oklahoma	269 (1.3)	269 (1.3)	251 (2.7)	251 (2.2)	252 (2.7)	258 (3.1)	*** (***)	*** (***)	258 (2.5)	256 (2.7)
Oregon	269 (1.4)	269 (1.3)	*** (***)	*** (***)	247 (3.4)	243 (4.7)	274 (3.7)	272 (4.5)	254 (3.9)	251 (7.4)
Rhode Island	267 (0.8)	269 (0.9)	251 (4.8)	249 (4.0)	237 (4.1)	240 (3.4)	272 (4.3)	267 (4.9)	*** (***)	*** (***)
South Carolina	265 (1.1)	265 (1.1)	241 (2.0)	241 (1.5)	227 (4.6)	229 (3.7)	*** (***)	*** (***)	*** (***)	*** (***)
Tennessee	266 (1.3)	265 (1.5)	238 (2.3)	237 (2.6)	234 (5.6)	231 (7.1)	*** (***)	*** (***)	*** (***)	*** (***)
Texas	273 (1.6)	272 (1.5)	245 (3.1)	246 (2.7)	252 (2.1)	250 (1.9)	277 (4.2)	277 (4.2)	*** (***)	*** (***)
Utah	267 (1.0)	267 (1.0)	*** (***)	*** (***)	251 (3.8)	244 (5.1)	261 (5.3)	264 (5.3)	*** (***)	*** (***)
Virginia	274 (1.2)	274 (1.2)	249 (1.6)	249 (1.8)	253 (5.2)	258 (3.4)	271 (4.8)	274 (3.9)	*** (***)	*** (***)
Washington	269 (1.4)	269 (1.2)	249 (3.9)	242 (5.0)	245 (3.1)	242 (3.3)	264 (3.7)	267 (2.9)	244 (4.5)	247 (4.3)
West Virginia	263 (1.2)	263 (1.0)	246 (3.7)	248 (5.4)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Wisconsin †	271 (1.3)	270 (1.4)	238 (7.0)	235 (8.1)	250 (4.7)‡	251 (4.5)	*** (***)	*** (***)	*** (***)	*** (***)
Wyoming	266 (1.3)	266 (1.2)	*** (***)	*** (***)	241 (4.5)	245 (2.6)	*** (***)	*** (***)	244 (3.7)	244 (4.3)
Other Jurisdictions										
District of Columbia	280 (6.6)	282 (8.1)	234 (1.8)	234 (2.2)	233 (8.3)	230 (5.4)	*** (***)	*** (***)	*** (***)	*** (***)
DDESS	279 (3.1)	279 (4.7)	253 (6.7)	248 (8.0)	268 (4.5)	273 (4.9)	*** (***)	*** (***)	*** (***)	*** (***)
DoDDS	276 (2.0)	275 (1.5)	259 (2.0)	257 (4.1)	263 (2.6)	265 (2.4)	268 (2.7)	270 (2.4)	*** (***)	*** (***)
Virgin Islands	*** (***)	*** (***)	234 (4.2)	233 (2.5)	230 (6.0)	226 (6.9)	*** (***)	*** (***)	*** (***)	*** (***)

Standard errors of the average scores appear in parentheses.

*** (***) Sample size is insufficient to permit a reliable estimate.

‡ The nature of the sample does not allow accurate determination of the variability of the statistic.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table B.25 — Data for Table 3.7 National average reading scores by Free/Reduced-Price School Lunch Program eligibility, when accommodations were not permitted and when accommodations were permitted, grades 4, 8, and 12: 1998

	Eligible		Not eligible		Information not available	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Grade 4	198 (1.2)	196 (1.5)	227 (0.9)	228 (0.9)	227 (2.8)	225 (2.7)
Grade 8	246 (1.3)	245 (1.0)	270 (1.0)	269 (1.0)	272 (2.2)	272 (2.0)
Grade 12	271 (1.2)	270 (1.1)	293 (0.8)	293 (0.6)	296 (1.8)	295 (1.6)

Standard errors of the average scores appear in parentheses.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.26 — Data for Table 3.8 State average reading scores by Free/Reduced-Price School Lunch Program eligibility for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 4: 1998

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	Eligible		Not eligible		Information not available	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Nation	198 (1.2)	196 (1.5)	226 (1.0)	227 (0.9)	225 (4.0)!	222 (3.5)!
Alabama	196 (1.7)	196 (1.9)	226 (2.0)	226 (2.2)	204 (5.0)!	211 (4.9)!
Arizona	188 (3.3)	189 (1.9)	222 (1.9)	221 (1.8)	212 (5.8)!	208 (4.1)!
Arkansas	196 (1.9)	196 (2.1)	221 (1.6)	221 (1.6)	213 (6.6)!	208 (7.5)!
California †	182 (4.4)	182 (3.3)	218 (2.7)	218 (2.7)	212 (9.0)!	219 (7.3)!
Colorado	204 (2.0)	202 (1.9)	229 (1.3)	227 (1.4)	216 (11.2)!	218 (12.4)!
Connecticut	205 (2.3)	203 (2.9)	240 (1.9)	238 (1.3)	239 (4.0)!	240 (3.7)!
Delaware	199 (2.1)	189 (2.9)a	221 (1.5)	219 (1.7)	*** (***)	*** (***)
Florida	192 (1.8)	190 (1.9)	222 (1.5)	220 (1.7)	215 (5.0)!	217 (3.8)!
Georgia	193 (2.0)	192 (1.9)	227 (2.0)	224 (1.6)	218 (5.1)!	217 (3.7)!
Hawaii	185 (2.4)	185 (2.3)	212 (1.4)	212 (1.4)	*** (***)	*** (***)
Iowa †	210 (1.8)	205 (2.6)	229 (1.2)	226 (1.6)	216 (3.6)!	216 (17.9)!
Kansas †	207 (2.7)	206 (2.1)	229 (1.5)	229 (1.5)	236 (3.7)	231 (4.6)!
Kentucky	204 (1.7)	206 (1.6)	229 (1.5)	227 (1.5)	*** (***)	*** (***)
Louisiana	193 (1.8)	189 (2.0)a	224 (1.8)	221 (2.0)	209 (14.5)!	206 (15.5)!
Maine	216 (2.0)	215 (1.8)	230 (1.2)	230 (1.7)	226 (5.7)!	221 (7.1)!
Maryland	195 (2.1)	192 (2.4)	225 (2.1)	222 (1.8)	210 (8.8)!	195 (8.5)!
Massachusetts †	205 (2.1)	203 (1.9)	233 (1.3)	230 (1.5)	226 (5.9)!	224 (5.1)!
Michigan	200 (2.6)	200 (2.6)	226 (1.3)	225 (1.3)	214 (7.5)!	214 (6.3)!
Minnesota †	202 (2.4)	198 (2.9)	230 (1.5)	228 (1.6)	225 (2.8)!	218 (5.0)!
Mississippi	195 (1.5)	194 (1.5)	220 (1.9)	219 (1.8)	*** (***)	*** (***)
Missouri	202 (2.7)	202 (2.0)	225 (1.7)	224 (1.7)	222 (13.1)!	219 (12.0)!
Montana †	215 (2.5)	212 (2.2)	234 (1.6)	233 (1.6)	223 (4.2)!	222 (3.7)!
Nevada	189 (1.9)	189 (2.2)	217 (1.4)	214 (1.8)	217 (5.8)!	221 (3.5)!
New Hampshire †	208 (2.7)	211 (3.1)	231 (1.3)	230 (1.7)	220 (3.7)!	222 (3.9)!
New Mexico	194 (2.5)	193 (1.8)	224 (2.8)	223 (1.9)	214 (4.2)!	211 (4.5)
New York †	197 (1.9)	196 (2.2)	232 (1.3)	231 (1.1)	226 (8.0)!	223 (6.0)!
North Carolina	202 (1.7)	198 (2.0)a	227 (1.4)	224 (1.7)	223 (6.2)!	216 (5.9)!
Oklahoma	209 (1.6)	208 (1.7)	230 (1.0)	231 (1.2)	215 (3.7)!	215 (3.5)!
Oregon	196 (2.4)	192 (2.3)	225 (1.4)	223 (1.7)	223 (3.5)!	216 (6.5)!
Rhode Island	196 (2.7)	195 (2.4)	231 (1.2)	230 (1.3)	*** (***)	*** (***)
South Carolina	196 (1.5)	194 (2.0)	223 (1.4)	223 (1.2)	*** (***)	*** (***)
Tennessee	198 (2.0)	198 (1.8)	225 (1.5)	224 (1.4)	203 (7.9)!	195 (8.8)!
Texas	203 (2.5)	199 (2.0)	231 (1.8)	230 (1.9)	199 (10.1)!	202 (9.5)!
Utah	203 (2.2)	205 (2.1)	222 (1.5)	222 (1.3)	220 (4.0)!	220 (3.6)!
Virginia	200 (1.8)	198 (1.6)	228 (1.5)	226 (1.6)	217 (5.1)!	226 (5.2)!
Washington	200 (2.1)	203 (2.4)	225 (1.3)	226 (1.2)	230 (6.2)!	223 (10.2)!
West Virginia	205 (1.5)	205 (1.6)	228 (1.6)	227 (1.9)	*** (***)	*** (***)
Wisconsin †	206 (1.7)	203 (2.1)	231 (1.1)	230 (1.3)	220 (5.6)!	213 (8.9)!
Wyoming	208 (2.1)	207 (2.5)	225 (2.0)	224 (1.5)	224 (5.7)!	221 (4.7)!
Other Jurisdictions						
District of Columbia	174 (1.5)	172 (1.2)	216 (4.0)	215 (3.0)	200 (4.8)	188 (7.0)
DDESS	214 (1.9)	212 (2.1)	226 (2.8)	225 (2.1)	224 (10.4)	215 (11.8)
DoDDS	221 (5.0)	217 (4.3)	228 (2.5)	224 (2.8)	222 (1.4)	221 (1.2)
Virgin Islands	179 (2.1)	175 (2.5)	*** (***)	*** (***)	164 (14.1)	153 (11.9)

Standard errors of the average scores appear in parentheses. *** (***) Sample size is insufficient to permit a reliable estimate.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

a Indicates significantly different from original.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B.27 — Data for Table 3.9 State average reading scores by Free/Reduced-Price School Lunch Program eligibility for public schools only, when accommodations were not permitted and when accommodations were permitted, grade 8: 1998

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	Eligible		Not eligible		Information not available	
	Without accommodations	With accommodations	Without accommodations	With accommodations	Without accommodations	With accommodations
Nation	246 (1.3)	245 (1.0)	269 (1.0)	268 (1.0)	265 (2.7)	264 (2.3)
Alabama	241 (1.6)	241 (1.7)	265 (1.4)	265 (1.5)	*** (***)	*** (***)
Arizona	245 (1.5)	246 (1.8)	270 (1.4)	269 (1.3)	264 (3.1)	259 (2.9)
Arkansas	242 (1.7)	243 (2.1)	264 (1.4)	264 (1.3)	263 (8.4)!	262 (9.6)!
California †	237 (1.7)	235 (1.5)	267 (1.9)	267 (1.8)	253 (4.9)!	255 (4.1)!
Colorado	245 (2.7)	249 (2.0)	271 (1.0)	270 (1.1)	257 (4.5)!	252 (4.9)
Connecticut	249 (2.4)	249 (1.9)	277 (1.1)	276 (1.3)	275 (3.3)!	273 (2.7)!
Delaware	239 (2.3)	238 (3.2)	263 (1.1)	262 (1.7)	258 (3.0)	247 (6.7)
Florida	240 (2.6)	241 (2.2)	262 (1.6)	265 (1.3)	258 (3.4)!	259 (2.0)!
Georgia	241 (2.0)	240 (1.8)	267 (1.6)	268 (1.5)	262 (3.5)!	263 (1.8)!
Hawaii	239 (2.0)	238 (2.2)	255 (1.3)	254 (1.3)	260 (7.3)	261 (3.7)
Kansas †	256 (2.3)	254 (2.5)	274 (1.0)	275 (1.2)	*** (***)	*** (***)
Kentucky	251 (1.6)	251 (1.8)	270 (1.5)	270 (1.8)	262 (4.6)!	259 (7.3)!
Louisiana	242 (2.0)	243 (1.5)	263 (1.6)	262 (1.6)	244 (6.6)!	245 (6.0)!
Maine	261 (2.1)	259 (2.1)	277 (1.2)	276 (1.4)	274 (3.6)!	277 (3.7)!
Maryland †	242 (2.2)	239 (2.2)	269 (1.8)	270 (1.9)	*** (***)	*** (***)
Massachusetts	248 (2.1)	247 (2.0)	276 (1.4)	276 (1.4)	269 (14.0)!	265 (13.0)!
Minnesota †	250 (2.7)	248 (2.5)	272 (1.3)	271 (1.4)!	271 (4.9)!	263 (4.7)!
Mississippi	240 (1.6)	241 (1.4)	263 (1.4)	264 (1.4)	249 (8.5)!	254 (3.6)!
Missouri	249 (1.9)	248 (2.1)	269 (1.3)	269 (1.3)	249 (12.5)!	249 (9.2)!
Montana †	260 (1.8)	259 (3.2)	275 (1.2)	276 (1.4)	263 (5.5)!	270 (4.9)!
Nevada	241 (2.9)	245 (2.3)	263 (1.0)	263 (1.1)	259 (3.2)	255 (4.2)
New Mexico	249 (2.2)	250 (1.7)	266 (1.5)	265 (1.7)	258 (3.2)	259 (3.2)
New York †	252 (1.9)	250 (1.8)	276 (1.8)	275 (1.7)	271 (4.0)!	270 (4.4)!
North Carolina	249 (1.6)	247 (1.8)	271 (1.3)	271 (1.3)	261 (5.9)!	258 (5.9)!
Oklahoma	258 (1.6)	257 (1.7)	271 (1.5)	270 (1.4)	262 (3.8)!	262 (3.0)!
Oregon	251 (2.2)	252 (2.2)	271 (1.4)	271 (1.6)	270 (5.4)!	267 (6.0)!
Rhode Island	245 (2.2)	246 (2.0)	269 (0.9)	272 (0.9)	*** (***)	*** (***)
South Carolina	240 (2.1)	240 (1.5)	265 (1.0)	266 (1.1)	256 (4.9)!	259 (5.7)!
Tennessee	242 (1.8)	240 (1.8)	267 (1.5)	267 (1.4)	254 (4.6)!	254 (5.6)!
Texas	248 (2.1)	246 (1.8)	271 (1.5)	270 (1.4)	*** (***)	262 (12.7)!
Utah	254 (2.4)	248 (2.7)	269 (1.2)	268 (0.9)	261 (2.9)	267 (1.9)
Virginia	247 (1.8)	248 (1.8)	272 (1.1)	272 (1.2)	271 (3.1)!	268 (3.4)!
Washington	247 (1.9)	245 (2.3)	270 (1.5)	269 (1.3)	270 (4.0)!	271 (3.6)!
West Virginia	254 (1.6)	254 (1.4)	268 (1.3)	268 (1.4)	249 (7.9)!	255 (9.8)!
Wisconsin †	249 (3.5)	250 (4.4)	271 (1.5)	270 (1.6)	267 (2.7)!	268 (4.1)!
Wyoming	252 (2.4)	252 (2.4)	265 (1.3)	267 (1.2)	*** (***)	*** (***)
Other Jurisdictions						
District of Columbia	228 (2.3)	229 (3.1)	257 (3.1)	253 (4.6)	234 (3.3)	234 (2.4)
DDESS	261 (5.6)	259 (9.1)	273 (2.5)	274 (2.6)	*** (***)	*** (***)
DoDDS	257 (5.8)	257 (2.3)	267 (2.6)	267 (2.3)	271 (1.2)	270 (1.3)
Virgin Islands	233 (3.8)	231 (2.9)	*** (***)	*** (***)	234 (3.0)	233 (3.1)

Standard errors of the average scores appear in parentheses.

*** (***) Sample size is insufficient to permit a reliable estimate.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation. See Donahue, P.L., Voelkl, K.E., Campbell, J.R., & Mazzeo, J. (1999). *The NAEP 1998 reading report card for the nation and the states* (NCES Publication No. 1999-500). (appendix A, p. 155). Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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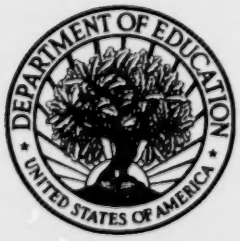

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